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Mental health and intellectual disability professionals use of emotion regulation and coping strategies, and their relationship to burnout: A systematic review

and

The indirect effect of attitudes towards aggression on forensic mental health professionals' wellbeing, and the role of psychological flexibility

Lorne Bott

Doctorate in Clinical Psychology

The University of Edinburgh

August 2019

DClinPsychol Declaration of Own Work

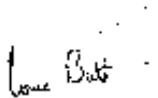
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Dedication

I would like to dedicate this thesis to my grandfather, Arthur Jaap, who lost his battle with cancer whilst I was undertaking this research. You were always one of my biggest supporters, and I hope I've made you proud.

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Complete Thesis Abstract

Introduction: Poor employee wellbeing has been linked to higher levels of staff sickness and poorer quality of care in mental health and intellectual disability services. Despite the implications, research into factors associated with poor wellbeing in these populations is limited, with research into the wellbeing of forensic mental health professionals being particularly scarce. Forensic mental health professionals face unique demands in their roles, including increased exposure to violence and aggression, which have been linked to reduced wellbeing. Several resources including tolerant attitudes towards aggression and psychological flexibility have been associated with improved wellbeing in this population. Little is known about the interactive effects of job demands and resources on the wellbeing of forensic mental health professionals, and research into this is required to increase our understanding of potential mechanisms for change. To address these issues, a systematic review was conducted to examine the relationship between various coping and emotion regulation strategies, and burnout, in mental health and intellectual disability professionals. Following this, an empirical study which aimed to investigate the indirect effect of attitudes towards aggression on wellbeing, via exposure to violence and beliefs about safety, was conducted. The role of psychological flexibility in these relationships was also explored.

Method: A systematic search was conducted across four databases (Medline, EMBASE, Psychinfo and CINAHL) and 11 studies that met the inclusion criteria were identified. The methodological quality of the included studies was assessed. For the empirical study, data from a previous study conducted by Cooper, Ferreira

and Slessor (2016), where forensic mental health professionals working in a high security setting completed self-report questionnaires assessing attitudes towards aggression, perceived exposure to aggression, beliefs about safety, psychological flexibility and wellbeing, were re-analysed using serial mediation and moderated serial mediation analyses.

Results: The results of the systematic review showed that increased mindfulness and acceptance were associated with decreased burnout, whereas escape-avoidance and maladaptive coping were associated with increased burnout. Higher levels of mindfulness and emotion-focused coping significantly predicted decreased burnout, whereas increased maladaptive coping significantly predicted increased burnout. Problems with methodological quality were common. The results of the empirical paper indicated that less tolerant attitudes to aggression are indirectly associated with reduced wellbeing via increased perceived exposure to aggression and increased concerns related to personal safety. The negative impact of increased concerns about safety on psychological distress was strongest in individuals with lower levels of psychological flexibility.

Conclusions: The review concluded that further research exploring the relationships between coping and emotion regulation strategies and burnout in mental health and intellectual disability professionals is required, with a focus on increasing methodological quality. It was suggested that interventions aimed at increasing mindfulness and acceptance may have some utility in reducing burnout in this population. The empirical study concluded that staff who hold less tolerant views of

aggressive behaviours may perceive themselves as being exposed to aggression more frequently, leaving them more vulnerable to increased fears for their safety, leading to reduced wellbeing. The association between increased fears about safety and increased psychological distress was even stronger when coupled with low levels of psychological flexibility. It was suggested that interventions which focus on changing the way staff relate to difficult thoughts and feelings may be effective in improving wellbeing in this population.

LAY summary

Burnout is a state of exhaustion, thought to be caused by frequent involvement in emotionally demanding situations over a long period of time. When people experience burnout related to their work, they may feel like they can't cope, develop negative attitudes towards clients and have no sense of personal achievement. In staff working in mental health and intellectual disability services, burnout has been linked to high sickness levels, staff leaving their jobs and patients receiving poorer quality care. There are several challenges that come with working in these settings (e.g. working with violence or behaviour that challenges). These challenges are likely to lead to distressing or uncomfortable thoughts and feelings, which could lead to the development of burnout over time. Some of the strategies people use to cope with difficult thoughts and feelings have been linked to higher levels of burnout (e.g. avoidance), whereas others have been linked to lower levels of burnout (e.g. problem-solving) in the general population. So far, no one has investigated the scientific literature to find out which coping strategies used by staff working in mental health and intellectual disability settings are linked to burnout. Through doing this, this study identified that strategies such as mindfulness and acceptance were linked to lower levels of burnout, and strategies such as avoidance, self-distraction, denial, substance use, self-blame and venting were linked to higher levels of burnout.

Staff working forensic mental health settings may have to deal with aggressive behaviour regularly, which can cause them to feel unsafe. This has been shown to have a negative impact on their wellbeing. Staff with more tolerant attitudes towards aggression (e.g. staff who view aggression as communication of distress) report more positive wellbeing. Higher levels of psychological flexibility have also been

linked to more positive wellbeing in forensic mental health staff. Psychological flexibility includes acknowledging any thoughts or feelings without trying to avoid or change them and acting in ways that are in line with our values. This study showed that staff who hold less tolerant views of aggressive behaviours (e.g. those who view aggressive behaviours as an expression of intent to cause harm) report dealing with aggression at work more often, leading to increased fears about their safety and reduced wellbeing. Having more concerns about safety at work led to higher levels of psychological distress in staff with lower levels of psychological flexibility compared to staff with higher levels of psychological flexibility.

Mental health and intellectual disability professionals use of emotion regulation and coping strategies, and their relationship to burnout: A systematic review

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Abstract

This review examined the relationship between coping and seven emotion regulation strategies (acceptance, avoidance, problem-solving, reappraisal, rumination, mindfulness and suppression) and burnout in mental health and intellectual disability professionals. A systematic search was conducted across four databases (Medline, EMBASE, Psycinfo and CINAHL), resulting in 2167 studies, of which 11 met the inclusion criteria. All studies included reported at least one cross-sectional relationship between an emotion regulation strategy or coping strategy and burnout. Key information was extracted from each study and the methodological quality was assessed. Increased mindfulness and acceptance were associated with decreased burnout, and escape-avoidance and maladaptive coping (e.g. self-distraction, denial, substance use, self-blame, venting and disengagement) were associated with increased burnout. All effect sizes were small to moderate. Higher levels of mindfulness and emotion-focused coping significantly predicted decreased burnout whereas increased maladaptive coping significantly predicted increased burnout. Assessment of methodological quality highlighted key concerns with regard to the generalisability of samples, power and the investigation of the effect of potentially confounding variables. Nevertheless, the results indicate that interventions aimed at increasing mindfulness and acceptance may have some utility in reducing burnout in this population.

Keywords: emotion regulation, coping, burnout, professionals

Introduction

Burnout was originally defined as “a state of physical, emotional and mental exhaustion caused by long-term involvement in situations that are emotionally demanding” (Pines & Aronson, 1988, p.9). Subsequent definitions have attempted to address the impact of the working environment in the development of burnout, by acknowledging that burnout is likely to emerge when employees have high job demands, coupled with low resources (Bakker & Demerouti, 2007; Maslach, Schaufeli & Leiter, 2001). Burnout has traditionally been described in terms of three components: depletion of emotional resources, negative attitudes towards clients and a lack of perceived personal achievement related to work (Maslach & Jackson, 1981). The most widely used measure of burnout in the literature, the Maslach Burnout Inventory (MBI; Maslach & Jackson, 1981), was developed based on this three-dimensional conceptualisation of burnout and consists of three sub-scales: emotional exhaustion, depersonalization and personal accomplishment. Several criticisms of this conceptualisation of burnout have been highlighted in the literature, which has led to alternative definitions of burnout being proposed and the development of new measurement tools. Kristensen, Borritz, Villadsen & Christensen (2005) defined burnout as having two core features: fatigue and exhaustion. They argued that a sense of decreased personal achievement should be considered a consequence of long-term involvement in stressful situations as opposed to a dimension of burnout itself, and depersonalisation should be considered as a coping strategy in response to occupational stress (Kristensen et al, 2005). Demerouti and Bakker (2007) described two underlying components of burnout: exhaustion and disengagement. They argued that depersonalisation is a form of disengagement and should not be considered as a separate component (Demerouti

and Bakker, 2007). Other measures of burnout describe it as being associated with feelings of hopelessness, difficulty coping and decreased effectiveness at work (Stamm, 2005).

Burnout in mental health and intellectual disability professionals

Research indicates a high prevalence of burnout amongst mental health professionals (O'Connor, Neff & Pitman, 2018; Paris & Hoge, 2010; Leiter & Harvie, 1996) in comparison to other health care professionals such as A&E and oncology nurses, and palliative care professionals (Adriaenssens, De Gucht & Maes, 2015; Gomez-Urquiza et al, 2016; Parola, Coelho, Cardoso, Sandgren & Apostolo, 2017). At the individual level, several studies have pointed towards a link between burnout and depression (Ahola et al, 2006; Steinhart, Smith Jaggars, Faulk & Gloria, 2011; Galan, Rios-Santos, Polo, Rios-Carrasco & Bullon, 2014; Hakanen & Schaufeli, 2012), and burnout has been associated with decreased quality of life (Fradelos et al, 2014) and poor physical health (Kim, Je & Kao, 2011; Peterson et al, 2008). At an organisational level, burnout has been linked to higher levels of staff sickness, intentions to leave the organisation, lower job satisfaction, increased staff turnover and negative attitudes towards patients in both mental health and intellectual disability services (Pines & Maslach, 1978; Holmqvist & Jeanneau, 2006; Ogresta, Rusac & Zorec, 2008; Acker, 2012; Scanlan & Still, 2013; Hatton & Emerson, 1993; Harvey & Burns, 1994; Hastings, 2002). Research in mental health services has found that burnout is associated with lower levels of patient satisfaction, poorer quality of care and poorer outcomes for patients (Garman, Corrigan & Morris, 2002; Salyers et al, 2015; Priebe et al, 2004).

Levels of burnout in staff working in intellectual disability services have been identified as lower than the norm for human service professionals, with levels gradually decreasing over the last twenty years (Skirrow & Hatton, 2007). In intellectual disability services, the literature suggests that burnout may have a direct impact on patient care with staff being less likely to engage in positive interactions with patients (Lawson & O'Brien, 1994; Rose, Jones & Fletcher, 1998).

Coping and burnout

A range of organisational and personal factors have been linked to burnout in mental health and learning disability professionals in the literature, including personality, length of experience, workload, perceived poor staff support, role conflict and role ambiguity (Kozak, Kersten, Schillmoller & Nienhaus, 2013; Chung & Harding, 2009; Lent & Schwartz, 2012). In terms of personal factors linked to the development of burnout, a number of studies have highlighted the importance of coping strategies (Duquette et al, 1994). This review focuses on the link between coping and emotion regulation strategies and burnout as this provides a clear target for intervention to improve staff wellbeing in the future. Whilst staff could work on developing their own skills in utilising more effective coping strategies, organisations can also make changes to help employees' adopt more effective coping strategies, for example by ensuring access to regular supervision and increasing opportunities for staff to build relationships with their colleagues to increase social support.

Coping has been defined as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the demands of the person” (Lazarus & Folkman, 1984, p.141). In terms

of coping with negative emotions, the most widely accepted theoretical approach identifies two categories of coping: practical coping, which involves changing behaviour so that the stressor is controlled or removed, and emotion-focused coping, which involves managing difficult emotions associated with the stressor by avoiding them, denying them or trying to alter them (Lazarus, 1995). Other similar approaches describe approach and avoidance strategies (Tobin, Holroyd, Reynolds & Wiggall, 1989) or active-passive coping (Marroquin, Fontes, Scilletta & Miranda, 2010), whereby approach or active strategies involve attempts to control, reduce or remove the stressor and avoidance or passive strategies involve attempts to disengage or avoid the stressor. It should be highlighted that describing coping strategies using two distinct categories has been criticised as overly simplistic (Skinner, Edge, Altman & Sherwood, 2003).

A relatively recent meta-analysis of thirty-six studies conducted by Shin et al (2014) found that problem-focused coping was linked to decreased burnout, with emotion-focused coping being linked to higher levels of burnout across a range of occupations. In line with these findings, when looking specifically at mental health professionals and staff working with individuals with intellectual disabilities, the literature has consistently highlighted that the use of emotion-coping strategies is associated with burnout (Mitchell & Hastings, 2001; Hastings & Brown, 2002; Leiter, 1991; Thornton, 1992; Ben-Zur & Michael, 2007). It could be argued that the strategies grouped together under “emotion-focused” coping strategies may not all be associated with burnout in the same way and therefore, should not be considered as belonging to the same category. For example, seeking emotional support, positive reappraisal and acceptance are all considered emotion focused strategies. Unlike other strategies included under this umbrella, there is evidence that these strategies

can be associated with positive work experience and decreased burnout (Ceslowitz, 1989: Himle, Jayaratne & Thyness, 1989: Shapiro, Dorman, Burkey & Welker, 1999: Wiese, Rothmann & Storm, 2003: Noone and Hastings, 2011). Despite the existing research in this area, no systematic reviews or meta-analyses investigating the relationship between coping strategies and burnout in mental health and intellectual disability professionals have been published to date. Given the potential link between coping strategies and burnout, and the potential consequences of burnout, it seems important to increase our understanding of this relationship further so staff in these settings can be supported to develop effective ways of coping with the challenges they face.

Emotion regulation and burnout

Emotion regulation should be considered distinct from coping (Gross, 1998) and has been defined as “all the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions” (Thompson, 1994), where these processes can occur consciously or unconsciously (Gross, 1999). Whilst some researchers have conceptualised emotion regulation as gaining control over emotional experiences, reducing arousal and limiting the expression of negative emotions (Kopp, 1989), more recent definitions have emphasised that emotion regulation does not necessarily involve reducing or eliminating negative affect (Thompson, 1994), instead highlighting that emotion regulation involves experiencing the full range of human emotions (Gross & Munoz, 1995) and having an increased awareness and understanding of emotions, without necessarily attempting to change them (Thompson & Calkins, 1996).

Several emotion regulation strategies have been highlighted in the literature, including acceptance, mindfulness, avoidance, problem solving, reappraisal, rumination and suppression (Aldao, Nolen-Hoeksema & Schweizer, 2010). Models of emotion regulation, including Gross (1998) and Wenzlaff and Wegner's (2000) models, propose that emotion regulation strategies such as avoidance, suppression and elimination reduce can be effective in reducing the subjective experience of unpleasant emotions in the short-term, but are unlikely to be effective in the longer term. In line with this theory, preliminary evidence suggests that avoidance, suppression and rumination are associated with psychopathology, including anxiety and depression (Aldao et al, 2010). Several studies have been conducted which investigate the relationship between the different emotion regulation strategies highlighted in the literature and burnout, with some strategies being linked to increased burnout, and others being associated with decreased burnout.

Acceptance

Acceptance was initially defined in the coping literature as "accepting the fact that a stressful situation is real and must be dealt with" (Carver, Scheier & Weintraub, 1989). In contrast, the definition commonly used in the emotion regulation literature describes acceptance as "defused, open, undefended contact with the present moment as a fully conscious human being" (Harris, 2019, p.3). Using the more recent definition, evidence suggests that acceptance is associated with positive outcomes in relation to mental health (Thompson, Arnkoff & Glass, 2011; McCracken & O'Brien, 2012). Noone and Hastings (2011) found that greater acceptance was associated with reduced burnout in staff working with individuals with learning disabilities. Their use of the Action and Acceptance Questionnaire tool (AAQ-II: Bond et al, 2011) can be criticised as the internal consistency of this tool is often

found to be lower than that reported by the authors and some of the individual items have been deemed confusing for individuals who are not familiar with Acceptance and Commitment Therapy (ACT) (Bond et al, 2011). It should be noted that one systematic review exists which highlights a link between acceptance and increased burnout (Shin et al, 2014); however, this review included measures based on the earlier coping definition of acceptance and the participants were individuals working in a range of different occupations rather than being limited to mental health or intellectual disability professionals.

Mindfulness

Mindfulness involves “consciously bringing awareness to your here-and-now experience, with openness, interest and receptiveness” (Harris, 2019, p.4). Evidence points towards a link between mindfulness and increased wellbeing of mental health professionals (Richards, Campenni, Muse-Burke, 2010). Mindfulness-based interventions have been associated with a variety of positive outcomes in both mental health and intellectual disability professionals, including reduced stress, anxiety and burnout, and increased self-compassion (Shapiro, Brown & Biegel, 2007; Raab, 2014; Irving, Dobkin & Park, 2009; Noone and Hastings, 2010).

Despite promising results, research into the use of mindfulness-based interventions is still in the early stages: no randomized controlled trials have been conducted, very few researchers have collected follow-up data and studies are often under-powered. Nevertheless, the research is expanding, and mindfulness may be a useful emotion regulation strategy for this population.

Problem solving

Problem solving has been defined as “conscious attempts to change a stressful situation or contain its consequences” (Billings and Moos, 1981). It has been

proposed that problem-solving can be an effective emotion regulation strategy as it often leads to the stressor itself being modified or eliminated (Aldao et al, 2010). The research appears to suggest a link between problem solving and decreased burnout in a variety of occupations (Ceslowitz, 1989: Payne, 2001: Duquette, Kerouac, Sandhu, Ducharme & Saulnier, 1995). However, these studies could be described as out-dated. Additionally, one of the studies was under-powered (Payne, 2001) and all relied on one sub-scale of a wider measure of coping to measure problem-solving. Furthermore, these studies recruited participants from general healthcare settings. There are differences in the challenges faced by professionals in mental health and learning disability settings compared to general healthcare settings, and higher levels of burnout have been noted (Andriaenssens, et al, 2015: Gomez-Urquiza, et al, 2016: Parola et al, 2017): therefore, it cannot be assumed that the same association would be present in this population.

Reappraisal

Reappraisal is defined as “a form of cognitive change that involves construing a potentially emotion-eliciting situation in a way that changes its’ emotional impact” (Gross and John, 2003). Positive reappraisal has been theorised to facilitate problem-solving, thus leading to reduced burnout (Scheier, Weintraub & Carver, 1986). The general literature indicates that positive reappraisal has a negative relationship with burnout (Leiter, 1991: Shin et al, 2014), and there is some evidence that this is the case in mental health staff (Thornton, 1992). Furthermore, there is research to say that intellectual disability staff’s problematic attributions of patient’s behaviour that challenges (e.g. that the patient can control their behaviour) can be linked to increased burnout (Mills and Rose, 2011). There appears to be little research conducted into the link between reappraisal as a stand-alone emotion regulation

strategy and burnout in mental health and intellectual disability professionals: as noted, results cannot be generalised from other populations due to the unique challenges faced by this group and therefore, the evidence relating to this population is unclear.

Rumination

Rumination involves thinking about the causes, consequences and meanings of negative emotions in a repetitive manner (Nolen-Hoeksema, 1991). Engagement in rumination has been linked a range of poor psychological outcomes, including increased distress (Nolen-Hoeksema, McBride & Larson, 1997; Morrison & O'Connor, 2005; Calmes & Roberts, 2007) and burnout (Vandevala et al, 2017; Kosir, Tement, Licardo & Habe, 2015). Despite the lack of studies investigating the link between rumination and burnout in mental health and learning disability professionals, increased rumination has associated with decreased use of problem-solving (Hong, 2007): a strategy that has been linked to reduced burnout in this population (Ceslowitz, 1989).

Suppression

There are several types of suppression including thought suppression and expressive suppression. Research has consistently shown that conscious attempts to avoid unwanted thoughts typically leads to an increase in their occurrence (e.g. Wenzlaff & Wegner, 2000). Expressive suppression involves the conscious inhibition of emotional expression (Gross, 1998) and has been linked to depression and anxiety (Beblo et al, 2012; D'Avanzato, Joorman, Siemer & Gotlib, 2013). Whilst evidence does indicate that suppression is an adaptive coping strategy in the short-term (Geraerts, Merckelbach, Jelicic & Smeets, 2006), it has been shown to be

counterproductive long-term, leading to increased emotional arousal (Wastell, 2002: Geraerts et al, 2006). Given that one of the components of burnout is emotional exhaustion, it could be argued that using suppression as a means of coping could lead to burnout. Furthermore, negative emotional reactions to challenging behaviour have been linked to burnout in intellectual disability staff in the literature (Rose, Horne, Rose & Hastings, 2004), providing some evidence that more frequent experiences of negative emotions over time may increase the likelihood of burnout in this population.

Avoidance

In the coping literature, avoidance is defined as “diverting attention away from a stressor to reduce arousal” (Kashdan & Kane, 2011, p.85). In contrast, Hayes Wilson, Gifford, Follette & Strosahl (1996) describe “experiential avoidance”, which involves using strategies to suppress or avoid uncomfortable psychological experiences (as opposed to avoiding the stressor itself), including thoughts, emotions, physiological sensations, memories and urges. Preliminary evidence suggests a link between experiential avoidance and burnout (Iglesias, de Bengoa Vallejo & Fuentes, 2010: Vilardaga et al, 2011: Duarte & Pinto-Gouveia, 2017). However, the majority of these studies have used the AAQ-II to measure experiential avoidance: some criticisms of this measure have already been outlined.

Rationale and aims of the current study

Despite research identifying lower reported rates of burnout in learning disability professionals in comparison to mental health professionals, there are many challenges that professionals working in both of these services share including working with violence (Dunn & Ritter, 1995) or behaviour that challenges (Skirrow

& Hatton, 2007) and increased potential for staff to develop vicarious traumatisation and secondary traumatic stress (Bride, 2007; Steed & Downing, 1998). Whilst other health professionals are exposed to violence and aggression, research has shown that staff working in mental health and learning disability settings are more likely to be exposed to these types of behaviours than staff working in general health settings (Merecz, Rymaszewska, Moscicka, Kiejna & Jarosz-Nowak, 2006; Emerson & Hatton, 2003). These challenges are likely to lead to distressing or uncomfortable thoughts and emotions being experienced by the individuals working in these settings, which could lead to the development of burnout over time. It may be that staff working in these populations employ different strategies to regulate and cope with these difficult emotions, leading to a lower likelihood of developing burnout. To date, no systematic reviews or meta-analyses have investigated the association between coping and emotion regulation strategies, and burnout in this population. Therefore, the current review has the following aims:

- To examine the relationship between (a) coping strategies and (b) emotion regulation strategies (including acceptance, mindfulness, problem solving, avoidance, suppression, reappraisal and rumination) and burnout in professionals working in mental health and intellectual disability settings.
- To investigate the nature of these relationships and to what extent certain coping and emotion regulation strategies, and burnout, predict one another.

Materials and methods

Literature Searches

The reviewer searched for studies that provided data on at least one of the emotion regulation strategies or broader coping strategy categories, and burnout, in mental health or intellectual disability professionals. Searches were conducted in the following four databases: Medline, EMBASE, Psychinfo and CINAHL. Medline, Embase and Psychinfo were searched using the OVID platform. The last date searched was 27th February 2019. Duplicates were removed from the search before the following limits were applied: journal article, published from 1981 onwards, English language and human population. The reviewer selected 1981 as a starting point as the Maslach Burnout Inventory (Maslach & Jackson, 1981), the first tool developed to measure the concept of burnout, was published in that year. Searches were limited to articles written in English due to limited access to translation services. Search terms used covered the following three areas: burnout, emotion regulation/coping strategies and occupation. The search terms used for emotion regulation strategies were based on those used by Aldao et al (2010). The reviewer searched for combinations of the following key terms (and truncated versions of these terms) using the “keyword” option: “acceptance”, “avoidance”, “reappraisal”, “problem solving”, “rumination”, “suppression”, “mindfulness”, “emotion regulation”, “coping”, “burnout”, “occupational stress”, “work stress”, “job stress”, “emotional exhaustion”, “depersonalisation”, “personal accomplishment”, “personnel”, “professional”, “worker”, “staff”, “employee”, “clinician”, “practitioner”, “nurse”, “psychologist”, “psychiatrist”, “physician”, “medic”, “counsellor”, “therapist” and “psychotherapist”. Although the terms “occupational stress”, “work stress” and “job stress” are conceptually distinctive from burnout, the

terms were included to increase the sensitivity of the search and ensure that all relevant articles were identified. In line with PRISMA guidelines (Moher, Liberati, Tetzlaff & Altman, 2009), an example of the electronic search strategy can be found in Appendix C. The reference lists of relevant systematic reviews identified during the search were examined to identify articles that could potentially be included in the review. Additionally, the reference lists of all articles deemed eligible after full-text screening were also examined for potentially relevant articles.

Inclusion/exclusion criteria

Types of study included

Only primary research papers were included. Reviews, books, book chapters, book reviews, letters to editors and responses to journal articles were all excluded.

Population

To be included in the review, the sample population had to be comprised of mental health professionals or intellectual disability professionals (including psychiatrists, psychologists, nursing staff, occupational therapists, support workers, social workers, counsellors, and other medical professionals) with a direct role in providing patient care, working in mental health or intellectual disability services. If the sample was mixed, the paper was included if it was possible to separate the responses of mental health or intellectual disability professionals from other participants. Studies where participants were general healthcare professionals were excluded from the review.

Outcomes

Studies were included if they reported at least one cross-sectional relationship between an emotion regulation strategy or coping strategy and burnout, regardless of whether investigating the relationship between emotion regulation/coping and burnout was one of the main objectives of the study. All studies using quantitative measures of emotion regulation or coping were included within the review. Studies which assessed emotion regulation or coping qualitatively were excluded from the review. Studies which did not use a validated measure of burnout were also excluded. Commonly used validated measures of burnout include the Maslach Burnout Inventory (MBI: Maslach, Schaufeli & Leiter, 1996), the Copenhagen Burnout Inventory (CBI: Kristensen et al, 2005), the Oldenburg Burnout Inventory (OLBI: Demerouti & Bakker, 2008) and the Professional Quality of Life Scale (ProQOL: Stamm, 2005).

Study selection

A total of 2,167 papers were retrieved from the four databases that were searched. As detailed in Figure A, after implementing limits on the searches and removing all duplicates, the lead reviewer independently reviewed the remaining papers by title and abstract for eligibility using the inclusion/exclusion criteria. On occasion, it was unclear whether a study was eligible from the title and abstract alone. In these circumstances, the study was kept so the full text could be examined. After all papers were screened by title and abstract, the papers that remained were screened by full text. As previously noted, the reference lists of all remaining papers at this stage were hand searched for potentially relevant studies. Two separate reviewers independently examined the papers to be screened by full text using the inclusion

and exclusion criteria. The second reviewer was an Assistant Psychologist working in NHS Fife who was independent from the research.

Risk of bias assessment

The lead reviewer and a second reviewer (also an Assistant Psychologist working in NHS Fife who was independent from the research) independently reviewed the eligible papers using a version of the Downs and Black Quality Assessment Checklist (Downs & Black, 1998) adapted specifically for the purposes of this review (see Appendix D). The Downs and Black Quality Assessment Checklist was chosen as several systematic reviews have identified the Downs and Black Checklist as being a comprehensive measure and one of the most suitable tools available for use in systematic reviews (Deeks et al, 2003; Saunders, Soomro, Buckingham, Jamtvedt & Raina, 2003). The checklist consists of twenty-seven items areas assessing four areas of quality: reporting, external validity, internal validity and power (Downs and Black, 1998). Most of the questions are scored 1 (yes) or 0 (no/unable to determine), with the final question addressing power being rated from 0-5. The maximum total score is 32. The checklist was modified for the purpose of the current review as some of the questions related to randomized controlled trials and therefore, were not applicable in this instance. Additionally, it has been noted that the wording in the question addressing power in the original measure is ambiguous, making the item difficult to score (Eng et al, 2007). As a result, the scoring was modified to a three-point scale: two points were awarded when a power calculation was reported and an adequate sample size was achieved, with one point being awarded when a power calculation was reported but sample size was deemed inadequate or when a power calculation was not reported, but could be calculated from the information provided in the article and sample size was determined to be

adequate. No points were awarded if no power calculation was reported, there was sufficient information to conduct a power calculation, but the sample size was determined to be inadequate, or if it was not possible to calculate power from the data reported. The maximum score that could be achieved on the modified version of the checklist used in this review was 15.

Synthesis

Data was extracted from the studies that were deemed eligible after full text screening. In line with recommendations by Deeks, Higgins and Altman (2011), quantitative synthesis of results was deemed not to be appropriate due to high heterogeneity of sample characteristics and measurement tools used to assess emotion regulation strategies, coping strategies and burnout between studies.

Results

Agreement between raters

There was 100% agreement between independent raters with regards to deciding which studies should be included within the review. Scoring using the risk of bias assessment resulted in 84.1% agreement between raters.

Characteristics of the studies

As demonstrated in Figure A, 901 studies remained to be screened by title and abstract from the initial search following the removal of duplicates and search limitations being applied: 73 studies were screened by full text. Eleven studies met the criteria for inclusion in the review. The characteristics of each of the studies included within the review can be found in Table A1 (Appendix E). Five of these studies were conducted in the UK, two in Australia, two in the USA, one in Israel

and one in Singapore. The reviewed studies included a total of 1,416 participants with sample sizes ranging from 36 to 234 across the range of studies. All studies reviewed included mixed gender samples, with the mean age ranging from 32.4 years to 45.7 years. Six studies did not report data on the mean age of the population, but three of these provided data on the percentage of participants within different age ranges (Yang, Meredith & Kahn, 2017; Thompson, Amatea & Thompson, 2014; Freedman & Tuval-Mashiach, 2018).

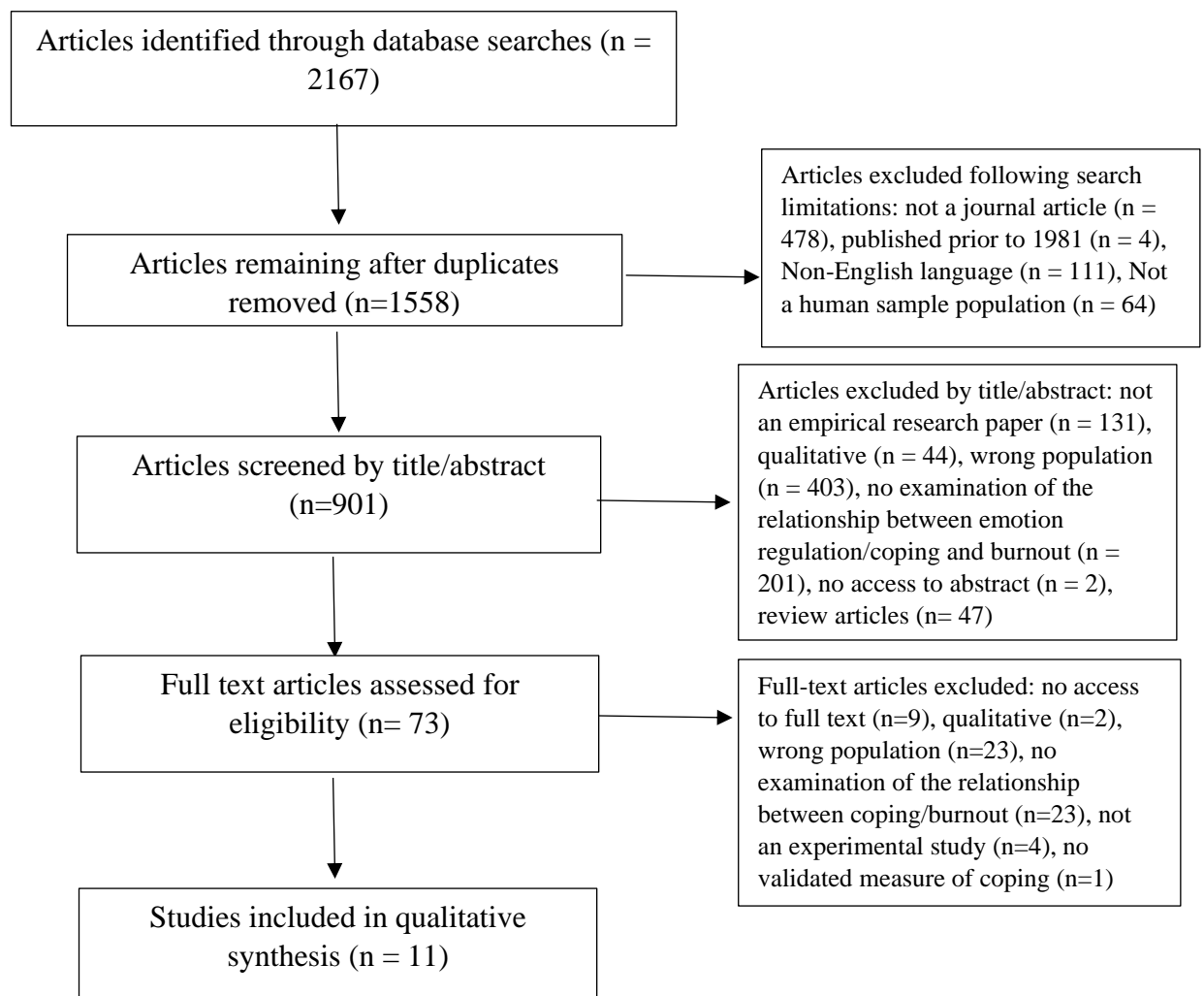


Figure A: Flow chart demonstrating the selection of studies for the review

The most common professional group were psychologists (n=284), followed by counsellors (n=230). One study (Yang et al, 2017) grouped these two professions together (n=14) and counsellors were included in the “other” category in another study (Freedman & Mashiach, 2018). Direct care workers and healthcare assistants (n=188) and qualified nursing staff (n=176) were the next most common professional groups. Two studies (Mitchell & Hastings, 2001: Noone & Hastings, 2011) did not differentiate between qualified nursing staff and health care assistants (n=142 across both studies). They reported on the percentage of participants with qualifications related to intellectual disability (33% and 44% respectively) but did not specify that the qualification held was a nursing qualification. Some studies chose to group together different professional groups, for example, “allied healthcare professionals” or “therapy staff” but did not report on which professions were included within these groups. One study used an “other” category but did not define this further (Yang et al, 2017).

The studies were conducted in a range of settings including an NHS residential hospital, community-based services and day services for individuals with intellectual disabilities (Devereux, Hastings, Noone, Firth & Totsika, 2009: Noone and Hastings, 2011: Mitchell & Hastings, 2001: Mascha, 2007) and NHS mental health services providing primary, secondary and inpatient care (Askey-Jones, 2018). One study was conducted in inpatient and outpatient services of a large state psychiatric centre in the USA (Thornton, 1992). In Aitken and Schloss’s (1994) study, it was not clear if participants were recruited from one site or multiple sites as the authors only reported that participants were employees of a government department for the care of people with an intellectual disability in Queensland. The remaining studies did not report recruitment sites as data appeared to have been gathered mostly online. One

study did not provide any information on how participants had been recruited (Yang et al, 2017) and the others had used a variety of methods to recruit including advertising on the Australian Psychological society's website and emailing private practice organisations (Di Benedetto & Swadling, 2014). All studies reviewed used convenience or snowball sampling.

Methodological quality

The quality ratings achieved by each of the eleven studies using the modified Downs and Black (1998) checklist are reported in Table A2 (Appendix F). Scores ranged from 6 to 12 (mean = 10, SD= 1.90), from a maximum score of 15.

In terms of strengths, all studies reviewed clearly outlined the main aims and objectives. Appropriate statistical tests were used, and no retrospective analyses were undertaken without being clearly noted. Another strength identified was the quality of the measurement tools used to assess burnout. Eight of the eleven studies reviewed utilised versions of the MBI (Maslach et al, 1996). The MBI is considered the gold-standard tool for the measurement of burnout (Schaufeli, Leiter & Maslach, 2009; Schaufeli & Taris, 2005), and its' use has been validated with mental health and intellectual disability professionals (Kilfedder, Power and Wells, 2001; Rupert & Morgan, 2005; Hastings, Horne & Mitchell, 2004). Reliability was reported to be good to excellent for the total score and emotional exhaustion scales across studies, and acceptable to good for the personal accomplishment scale (see Table A1: Appendix E). One study reported poor reliability for the depersonalisation scale and excluded it from further analysis (Devereux et al, 2009): the remaining studies reported good reliability for this scale.

Three other measurement tools were used in the studies reviewed to measure burnout: the OLBI (Demerouti & Bakker, 2008), the CBI (Kristensen et al, 2005) and the burnout scale of the ProQOL (Stamm, 2005). Good reliability was demonstrated for the burnout scale of the ProQOL, and excellent reliability was demonstrated for the CBI, in the studies included within this review (See Table 1). Cronbach's alpha was not reported for the OLBI but previous research has demonstrated good reliability in healthcare professionals (Demerouti & Bakker, 2008). However, reliability has not been demonstrated specifically in mental health or intellectual disability professionals.

A range of measures were used to assess coping and emotion regulation. Two studies used the Shortened Ways of Coping Questionnaire (Hatton & Emerson, 1995) which consists of two sub-scales: practical coping and wishful thinking. Reliability was determined to be acceptable to good for both scales (Devereux et al, 2009; Mascha, 2007). Two studies utilised the Brief COPE (Carver, 1997) and one further study used the original version of the COPE (Carver et al, 1989). Only one study reported on reliability, with good internal reliability found demonstrated for each of the three subscales: emotion-focused coping, problem-focused coping and maladaptive coping (Thompson et al, 2014). Four of the studies included in the review measured mindfulness using three different tools: the Five Facets of Mindfulness Questionnaire (FFMQ: Baer, Smith, Hopkins, Krietemeyer & Toney, 2006) (n=2), Freiburg Mindfulness Inventory (FMI-14: Walach, Buchheld, Buittenmuller, Kleinknecht & Schmidt, 2006) (n=1) and the Mindful Attention and Awareness Scale (MAAS: Brown & Ryan, 2003) (n=1). Reliability was reported to be excellent for all three measures (Askey-Jones, 2017; Di Benedetto & Swaling, 2014:

Thompson et al, 2014). One study used the AAQ-II to measure acceptance: reliability was reported to be good (Noone & Hastings, 2011).

The reliability and validity of the measure used to assess coping or emotion regulation was rated as “unable to determine” in three studies (see Table A2: Appendix F). These ratings were given as authors failed to report on reliability or provide a reference which provided evidence of reliability or validity. The measures used in these studies included the FFMQ, the ‘Personal Resources’ sub-scale of the Occupational Stress Inventory (OSI: Osipow & Spokane, 1987) and the Ways of Coping Checklist (WCC-Revised: Lazarus & Folkman, 1984).

One limitation across all studies reviewed was external validity. For seven studies, the item on whether the individuals who were invited to participate were representative of the source population, were rated as “unable to determine”. All studies received a rating of “no” or “unable to determine” on the item which asked whether individuals who participated were representative of the source population. These ratings were primarily due to a lack of information surrounding the recruitment process, including how participants were approached or questionnaires distributed. The proportion of people who were invited to participate from the wider population being recruited from, and those who participated from those who were approached was rarely reported. In cases where the proportion of participants who took part from those invited to do so was reported, it was unclear how participants compared to the wider population from which they were recruited in terms of potential confounding factors. One study did provide demographic information about the source population to allow comparisons to be made; however, the final sample included a large percentage of full-time workers despite there being relatively few full-time workers employed in the staff teams who were invited to participate

(Mitchell & Hastings, 2001), meaning the sample was not representative. Although the authors suggested some potential reasons for this discrepancy (many participants were routinely working overtime), there was no evidence to support this claim.

A common limitation was that the characteristics of the sample were not clearly described (n=6). These ratings were mainly due to a lack of clarity around inclusion and exclusion criteria. One study provided extremely limited demographic information, only reporting the participants' job roles and gender (Aitken & Schloss, 1994). Another limitation was that several studies did not adjust for potential confounding variables (n=6). In some cases, data on potential confounding variables (e.g. length of experience) was gathered but the effects of these variables were not investigated whereas others reported significant effects of confounding variables on the main outcomes, but no adjustments were made. Only one study reported an a-priori power calculation (Freedman & Tuval-Mashiach, 2018). All studies provided sufficient information for a power calculation to be conducted: however, five of the studies were determined to be under-powered. As there are no programmes designed for mediation or canonical correlation power analyses, power was calculated based on regression and correlation respectively.

Four studies achieved a total score of eleven on the checklist (see Table A2: Appendix F). In contrast, Thornton's (1992) study was rated as being of the lowest quality due to the absence of defined inclusion and exclusion criteria, no simple outcome data being presented (e.g. mean scores on measures of burnout and coping), no estimates of random variability in the data being provided, a lack of information leading to difficulties in determining the representativeness of the sample and no appropriate adjustments made to account for the observed confounding effect of work setting on burnout.

Relationship between coping strategies, emotion regulation strategies and burnout

The first objectives of this review were to examine the relationships between coping strategies and burnout, and emotion regulation strategies and burnout. Seven studies investigated these relationships using correlation analysis (see Table A1: Appendix E).

Emotion regulation strategies and burnout

Of the studies investigating the relationship between mindfulness and burnout ($n=3$), all reported significant correlations between mindfulness and burnout. Small to moderate significant negative correlations were reported between mindfulness and burnout (Di Benedetto & Swadling, 2014; Thompson et al, 2014), and between the five different facets of mindfulness and burnout (Di Benedetto & Swadling, 2014). In line with these results, Askey-Jones (2018) found significant small negative correlations between mindfulness and emotional exhaustion, and depersonalisation, and a significant small positive correlation between mindfulness and personal accomplishment.

One study examined the relationship between acceptance and burnout, using the definition in the emotion regulation literature (Noone and Hastings, 2011). A small negative correlation was found.

When examining the extent to which emotion regulation strategies predict burnout, mindfulness was reported to be a significant negative predictor of overall burnout (Thompson et al, 2014). Yang et al (2017) found that all five facets of mindfulness significantly negatively predicted two aspects of burnout: emotional exhaustion and disengagement. A small effect size was noted for the effect on acting with awareness

on both emotional exhaustion and disengagement. However, the others failed to meet the threshold for a small effect size as defined by Cohen (1992).

Coping strategies and burnout

One study measured acceptance using the definition provided in the coping literature (Freedman & Tuval-Mashiach, 2018). A small negative correlation was noted between acceptance and burnout.

Maladaptive strategies, including self-distraction, denial, substance use, self-blame, venting and disengagement, were found to have moderate significant positive associations with overall burnout (Thompson et al, 2014). Higher use of escape-avoidance strategies was also found to be associated with increased burnout (Thornton, 1992).

In terms of the different aspects of burnout, coping strategies including planning, disengagement, instrumental support, venting, social support and rational/cognitive coping were reported to have very small to small significant negative correlations with emotional exhaustion (Freedman & Tuval-Mashiach, 2018; Aitken & Schloss, 1994).

Across the studies reviewed, only two coping strategies were found to have significant correlations with depersonalisation: rational/cognitive and social support. Both were small negative correlations (Aitken & Schloss, 1994).

Wishful thinking, which encompasses strategies such as disengagement, venting and substance use, was reported to have a significant moderate negative correlation with personal accomplishment (Mascha, 2007). A small but negative correlation was reported between disengagement and personal accomplishment in one other study (Freedman & Mashiach, 2018). Three strategies, rational/cognitive coping,

recreation and self-care, demonstrated small but significant positive correlations with personal accomplishment (Aitken & Schloss, 1994).

When examining the extent to which coping strategies predict burnout, emotion-focused coping was reported to be a significant negative predictor of overall burnout (Thompson et al, 2014), whereas maladaptive coping was demonstrated to be a significant positive predictor of burnout in the same study.

Disengagement, venting and wishful thinking were found to positively predict emotional exhaustion (Mitchell & Hastings, 2001; Devereux et al, 2009; Freedman & Mashiach, 2018). Furthermore, the use of wishful thinking was found to mediate the effects of perceived work demands on emotional exhaustion (Devereux et al, 2009).

Only two strategies were found to predict personal accomplishment: Mitchell and Hastings (2001) reported that disengagement was a significant negative predictor, whilst adaptive coping was a significant positive predictor.

Discussion

The purpose of this study was to examine how the strategies staff use to cope and regulate their emotions impact on their likelihood of experiencing burnout. Research into the relationship between coping and emotion regulation strategies, and burnout, in mental health and intellectual disability professionals appears to be lacking, as highlighted by the number of studies retained for inclusion within this review. Of the studies that were included common methodological difficulties were identified including lack of power, concerns around external validity, lack of clarity around inclusion and exclusion criteria and a failure to investigate potentially confounding variables or make appropriate adjustments to subsequent analyses when a

confounding effect was identified. Therefore, the generalisability of the results of this review are likely to be limited.

Despite these issues, there were several interesting findings noted. Firstly, in relation to emotion regulation strategies, the results provide preliminary support that increased levels of mindfulness are associated with lower levels of burnout in a range of mental health professionals (including psychologists, counsellors, nurses, occupational therapists, social workers and psychiatrists) across four different countries the UK, Australia, USA and Singapore. The results of two studies indicated that increased mindfulness predicted reduced burnout (Thompson et al, 2014; Yang et al, 2017). These findings are consistent with research into the relationship between mindfulness and burnout in general populations (Luken & Sammons, 2016), and research which has determined that mindfulness-based interventions may be effective in reducing burnout (Irving et al, 2009; Burton, Burgess, Dean, Koutsopoulou & Hugh-Jones, 2016; Cohen-Katz, Wiley, Capuano, Baker & Shapiro, 2004). These results are also consistent with some models (e.g. ACT) which propose that “contact with the present moment” (Harris, 2019, p.3) plays a key role in improving psychological outcomes (Hoffman & Asmundson, 2008). However, it should be noted that most of the correlations and effect sizes reported were small. Additionally, of the four studies that measured mindfulness, three different tools were utilised, reducing the ability to directly compare results as each measure of mindfulness may be assessing something slightly different.

The findings from the results of two studies (Noone and Hastings, 2011; Freedman & Tuval-Mashiach, 2018) also seem to provide preliminary support for the existence of an association between increased acceptance and reduced burnout. These findings are also consistent with research in general nursing staff which has highlighted a link

between acceptance and decreased burnout (Yao, Yao, Wang, Li & Lan, 2013).

However, the associations noted in the two studies were small, and therefore, further research would be required to replicate these results. In addition, one of the studies used the Brief COPE which only has a very small number of items related to acceptance. The other study used the AAQ-II: it could be argued that this tool measures psychological flexibility and not acceptance alone. Additionally, as previously mentioned, the AAQ-II has faced criticism due to the wording of the individual items, which are said to be confusing for individuals who are unfamiliar with ACT (Bond et al, 2011).

The findings provided some evidence that a range of similar coping strategies are associated with burnout. In one study, increased use of maladaptive coping strategies predicted increased burnout (Thompson et al, 2014). The strategies that were included under the category of maladaptive coping included self-distraction, denial, substance use, self-blame, venting and disengagement. In line with these results, higher levels of disengagement predicted increased emotional exhaustion and decreased personal accomplishment (Mitchell & Hastings, 2001). In a similar theme, increased wishful thinking was moderately associated with increased emotional exhaustion and moderately correlated with decreased personal accomplishment (Mascha, 2007). Furthermore, increased use of wishful thinking was found to predict higher levels of emotional exhaustion and mediated the relationship between increased perceived work demands and increased emotional exhaustion (Devereux et al, 2009). Wishful thinking strategies are described as attempts to cope with emotions experienced in response to a situation, rather than changing the situation itself. Strategies that would fall under this category have some overlap with strategies conceptualised as “maladaptive”, including disengagement. Higher

reported use of venting, which could also be categorised as an attempt to cope with emotions, was found to predict increased emotional exhaustion (Freedman & Tuval-Mashiach, 2018) and increased use of escape-avoidance strategies was related to increased symptoms of burnout (Thornton, 1992). There were some conflicting results as Freedman and Tuval-Mashiach (2018) reported small correlations between higher levels of disengagement and venting and reduced emotional exhaustion. However, taken together, the findings appear to largely support the general literature which has linked several of the same strategies to burnout in other professions (Anderson, 2000; Chen & Cunradi, 2008; Iglesias et al, 2010; Griffith, Barbakou & Hastings, 2014). Strategies such as disengagement and escape could be conceptualised as experiential avoidance, which is proposed to lead to increased distress and has been linked to burnout in the general literature (Iglesias et al, 2010; Vilardaga et al, 2011; Duarte & Pinto-Gouveia, 2017).

Conversely, increased use of strategies which have been typically described as adaptive in the literature, including planning, social support, self-care, recreation and rational coping (Aldao et al, 2010) were found to have very small to small relationships with increased emotional exhaustion (Freedman & Tuval-Mashiach, 2018; Aitken & Schloss, 1994), and higher levels of personal accomplishment (Aitken & Schloss, 1994). Furthermore, use of adaptive coping, which included social support and planning, in addition to “active coping”, acceptance and positive re-interpretation and growth, was found to predict increased personal accomplishment in intellectual disability professionals (Mitchell & Hastings, 2001). As before, the types of coping strategies associated with burnout in this review appear to broadly reflect those associated with burnout in the wider literature (Alkema, Linton & Davies, 2008; Simoni & Paterson, 1997; Antoniou, Ploumpi & Ntalla, 2013; Leiter, 1991).

Seemingly in contrast to previous research (Shin et al, 2014: Boyle, Grap, Younger & Thomby, 1991: Mitchell & Hastings, 2001: Hastings & Brown, 2002: Leiter, 1991: Thornton, 1992: Ben-Zur & Michael, 2007), increased use of emotion-focused coping was linked to decreased burnout in a sample of mental health counsellors (Thompson et al, 2014). However, when looking at the strategies that fall under the category “emotion focused”, several strategies including acceptance, positive re-appraisal and seeking emotional support, have been shown to have negative associations with burnout in other studies in this review, and in previous literature (Ceslowitz, 1989: Himle et al, 1989: Shapiro et al, 1999: Wiese et al, 2003: Noone and Hastings, 2011), which may explain this discrepancy to some degree.

There were considerable difficulties in comparing relationships between coping and emotion regulation strategies across the studies included within this review, due to the heterogeneity between measures of coping and emotion regulation. Categories of coping strategies appeared to frequently overlap and even when the same measure was used, studies conceptualised the strategies differently to each other. This reflects a wider problem in the definition and measurement of the constructs of coping and emotion regulation. Several authors have critiqued the most common categorisation of coping strategies (e.g. problem-focused/emotion focused or approach/avoidance) as overly simplistic (Skinner et al, 2003). Other studies in this review used a different way of categorising of coping strategies, either through conducting factor analysis or conceptually organising strategies based on previous research. This strategy has also been critiqued for the lack of consistency in the application of the different sub-types and categories of coping across different measures and studies (Compas, Connor-Smith, Saltzman, Thomsen & Wadsworth, 2001); a problem which can clearly be seen in this review. With regards to emotion regulation, it has

also been argued that the categorisation of strategies is problematic: for example, Berking and Wupperman (2012) argue the function of suppressing emotions can be to avoid negative evaluation from others, as opposed to regulating the emotional experience and therefore, in these circumstances suppression should not be considered an emotion regulation strategy. Further research to provide consistency in the way emotion regulation and coping strategies are measured and categorised is clearly needed.

Furthermore, all measures of coping and emotion regulation included in the studies within this review relied on self-report which can be regarded as a limitation (Todd, Tennen, Carney, Armeli, & Affleck, 2004; Berking & Wupperman, 2012). One final criticism of the measurement tools used by studies in this review is that the context in which coping or emotion regulation occurs is not considered; the measures assess strategies used in a more general sense, despite the context being identified as a significant influencing factor in the use of different means of coping or regulating emotions (Aldao, 2013). This is important when studying burnout, as the strategies staff use specifically in response to situations encountered at work may differ to those they would generally use in other situations.

Strengths and limitations of this review

There are several limitations of this review which must be acknowledged. Due to a lack of access to translation resources, only articles published in English were included in this review. Another primary limitation was that the review was limited to published journal articles, introducing the potential for publication bias. Despite the potential risk of publication bias, on balance it was thought that excluding unpublished papers could potentially ensure more robust methodology. The decision

to limit the search to 1981 onwards, as this was when the concept of burnout was first introduced, and the focus on studies in which the one of the outcomes was burnout, could be argued as excluding relevant broader literature on occupational stress. However, occupational stress and burnout have been defined as distinct concepts in the literature (Pines & Keinan, 2005), with occupational stress described as an antecedent to burnout (Bianchi, Schonfeld & Laurent, 2015). Therefore, the decision to focus on burnout alone makes theoretical sense. The decision to combine intellectual disability and mental health professionals could be regarded as a limitation, as staff working in these settings are likely to face different challenges in the workplace, and as a result, may respond differently in terms of how they manage their emotions or cope with situations in the workplace. However, there are many challenges which both professions have in common: including increased risk of violence and aggression (Anderson & West, 2011; Deb, Thomas & Bright, 2001), and barriers to developing therapeutic relationships with clients (for example: difficulties in communication: Lewis, Gaffney & Wilson, 2017; Pazargadi, Moghadam, Khoshknab, Renani & Molazem, 2015).

Although the use of a modified quality assessment checklist can be criticised as the reliability and validity of the checklist is unknown, it was based on a standardised checklist which has consistently been identified as a high-quality tool in the literature for the quality assessment of nonrandomised studies (Deeks et al, 2003; Saunders et al, 2003). The use of two independent raters to screen the articles included in the review by full text, and to assess the quality of the articles retained to be included within the review is recognised as a strength.

Clinical and research implications

The findings of this review provide preliminary support for an association between increased mindfulness and acceptance, and reduced burnout; albeit with small effects. This provides further support to the existing literature that mindfulness-based interventions may have some utility in reducing burnout in this population. Due to the small number of studies, the heterogeneity of samples and outcome measures and issues regarding the methodological quality of the studies included in this review, it is difficult to make recommendations for clinical practice based on the results.

Despite this, given the potential implications of burnout in this population on the individual, the organisation and the clients they care for, it is imperative that factors impacting on burnout, including emotion regulation and coping strategies, continue to be researched. Further research would benefit from consistency in measurement of coping and emotion regulation strategies, and the utility of different measurement tools in this population should continue to be investigated to determine which measures are the most appropriate. To improve the methodological quality, future studies in this area should ensure adequate power, and focus on increasing external validity by ensuring that participants are representative of the wider population they are being recruited from. Another way in which quality could be improved would be to ensure that the effects of potential confounding variables (e.g. work setting, length of experience) are investigated and appropriate adjustments are made to subsequent analyses if any confounding is identified.

Conclusions

This review highlights that research exploring the relationships between coping and emotion regulation strategies and burnout in mental health and intellectual disability

professionals is limited. Only eleven studies were retained for inclusion in the review, and there were several concerns noted regarding their methodological quality. The relationships between these variables should continue to be researched, with a focus on increasing methodological quality; in particular, the generalisability of samples, power and the investigation of the effect of potentially confounding variables. The review identified some relationships between individual emotion regulation and coping strategies and burnout including increased mindfulness and acceptance, and reduced burnout. The effects were small. Regardless, these findings highlight potential treatment targets for developing interventions in the future. Surprisingly, the results demonstrated that the use of emotion-focused coping is associated with reduced burnout in this population, despite being linked to increased burnout in the general population (Shin et al, 2014). Therefore, staff working in mental health and intellectual disability settings may benefit from developing skills in this type of coping.

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The indirect effect of attitudes towards aggression on forensic mental health professionals' wellbeing, and the role of psychological flexibility

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Abstract

Research has shown that job demands in forensic mental health (FMH) settings including exposure to aggression and feeling unsafe are linked to reduced employee wellbeing, whereas resources such as more tolerant attitudes to aggression are associated with improved wellbeing. In addition, recent research has identified psychological flexibility as a predictor of wellbeing in this population. The current study aimed to investigate the indirect effect of attitudes towards aggression on wellbeing via exposure to violence and beliefs about safety, and to explore the potential moderating effect of psychological flexibility on these relationships. Data from a previous study conducted by Cooper, Ferreira and Slessor (2016) were re-analysed using serial mediation and moderated serial mediation analyses.

Participants (n= 142) were FMH professionals working in a high security setting.

The results showed that the relationship between less tolerant attitudes to aggression and reduced wellbeing (increased burnout, secondary traumatic stress and psychological distress, and decreased compassion satisfaction) was serially mediated by increased perceived exposure to aggression and increased concerns related to personal safety. The negative impact of increased concerns about safety on psychological distress was strongest in individuals with lower levels of psychological flexibility. The clinical implications of these findings are discussed.

Keywords: attitudes, aggression, safety, psychological flexibility, wellbeing

Introduction

Wellbeing has been defined as “the balance point between an individuals’ resource pool and the challenges faced (Dodge, Daly, Huyton & Saunders, 2012, p.).

Research into the wellbeing of mental health professionals has demonstrated increased prevalence of burnout and high reported levels of psychological distress (Paris & Hoge, 2010: Rossi, et al, 2012: O’Connor, Neff & Pitman, 2018). Forensic mental health (FMH) settings have been identified as particularly stressful places to work (Kirby & Pollock, 1995). Research exploring wellbeing in FMH professionals is limited (Dickinson & Wright, 2008). Several studies indicate higher levels of psychological distress and burnout in comparison to general mental health professionals (Oddie & Ousley, 2007: Elliot & Daley, 2013); however, others have reported lower levels of burnout (Happell, Martin & Pinikahana, 2003). Research into staff wellbeing in high secure settings is particularly scarce.

The Job Demand Resource (JD-R) model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001: Schaufeli & Bakker, 2004) was developed to understand wellbeing at work. The model theorises that employee wellbeing is a balance between the positive aspects (resources) and negative aspects (demands) of work. Job demands are defined as “physical, social or organizational aspects of the job that require sustained physical and/or psychological effort and are therefore associated with physiological and/or psychological costs” (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007, p.122). Job demands have been linked to increased burnout, sickness leave and depression in the general literature (Schaufeli & Bakker, 2004: Schaufeli, Bakker & Van Rhenen, 2009: Hakanen, Schaufeli & Ahola, 2008).

There are several unique demands faced by FMH professionals including the experience of higher rates of violence and aggression than mental health professionals working in non-forensic settings (Mason, 2002; Bowers et al, 2011). Research has shown that staff working in high secure FMH services in particular are frequently confronted with violence and aggression (Uppal & McMurren, 2009). Furthermore, research suggests a link between exposure to violence and aggression in the workplace, and burnout, in other health care professionals (Evers, Tomic & Brouwers, 2002; Howard, Rose & Levenson, 2009). Although this link has yet to be established in FMH professionals, it can be hypothesized that their increased experience of dealing with violent and aggressive incidents in comparison to other populations may mean they are more vulnerable to burnout.

Exposure to violence and aggression in the workplace is likely to bring secondary job demands, including concerns about personal safety. Studies have found that a high proportion of psychiatric nurses have reported feeling unsafe at work (Poster, 1996; Lu, Wang & Liu, 2007), and there is evidence that intellectual disability staff who experience higher levels of aggression are more likely to report fear of future assaults (Rose & Cleary, 2007). Research investigating staffs' beliefs about safety in FMH settings is limited. Martin and Daffern (2006) found that most clinicians working in an Australian forensic inpatient setting reported that they felt safe at work. However, the self-report measure used to assess safety beliefs was unvalidated. Kurtz and Jeffcote (2011) conducted a qualitative study exploring staff's experiences in two NHS medium secure units, and one of the themes identified was "feeling unsafe". However, given the exploratory nature of this research, the sample size was small. Cooper, Ferreira and Slessor (2016) found marked concerns around safety in FMH professionals working in a high secure

setting with 71% of participants describing their role as “risky”; furthermore, increased concerns about safety predicted decreased wellbeing across several outcomes in this sample.

In contrast to job demands, job resources are defined as “physical, social or organizational aspects of the job that a) are functional in achieving work-related goals, b) reduce job demands and the associated physiological and psychological costs, and c) stimulate personal growth and development” (Xanthopoulou et al, 2007, p.122). Whilst the original JD-R model focused on resources in the work environment, personal resources have more recently been incorporated into the model (Schaufeli & Taris, 2014). They proposed that personal resources can be integrated into the JD-R model in five ways. They postulated that personal resources can directly impact on wellbeing, buffer the negative effects of job demands or shape the way in which individuals perceive, experience and react to job demands (Schaufeli & Taris, 2014). They also suggested that the development of personal resources may be a consequence of a positive work environment, in turn, leading to positive impacts on wellbeing, and finally, that personal resources may act as a third variable which explains the relationship between perceptions of the work environment and wellbeing (Schaufeli & Taris, 2014).

One potential resource that could impact on staff wellbeing in this population is attitudes towards violence and aggression. Despite limited research in this area, studies have highlighted links between more tolerant attitudes towards violence (e.g. viewing violence as a form of communication or protection) and lower levels of burnout in forensic mental health professionals (Whittington, 2002: Whittington & Higgins, 2002). However, Whittington’s (2002) study appears to have been under-

powered, and the latter study recruited participants from China: meaning the results may not be generalisable to the UK.

Another concept that has been highlighted as a potential resource for employee's in the general literature is psychological flexibility. Psychological flexibility is proposed to be the central mechanism of change in Acceptance and Commitment Therapy (ACT) (Bond, Hayes & Barnes-Holmes, 2006). It is defined as “the ability to fully contact the present moment and the thoughts and feelings it contains without needless defence, and depending on what the situation affords, persisting in or changing behaviour in the pursuit of goals and values” (Bond et al, 2011).

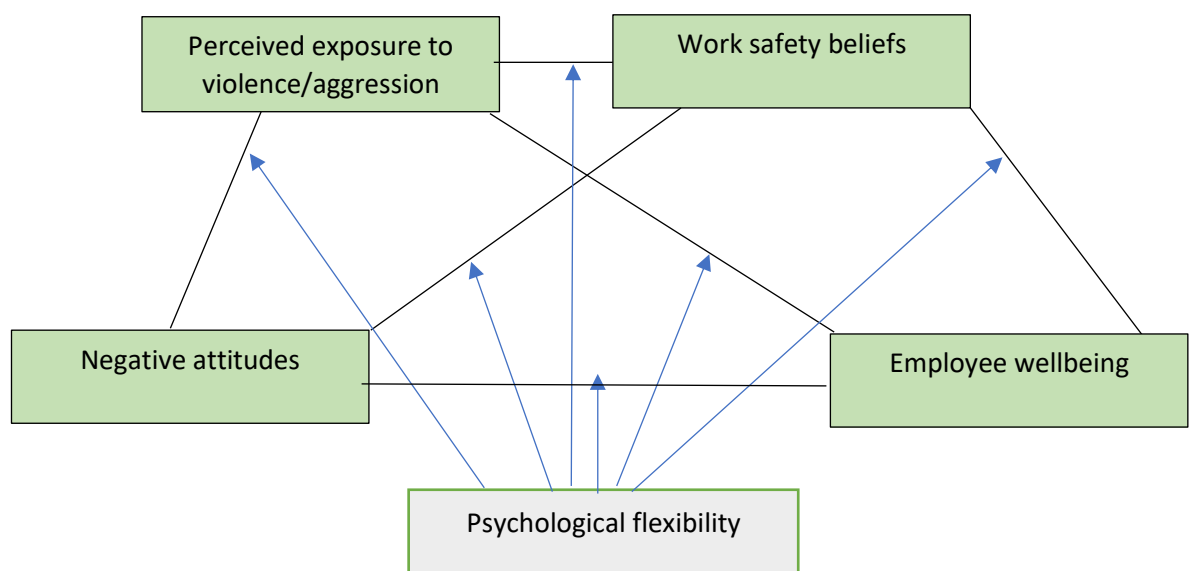
Psychological inflexibility has been associated with burnout and compassion fatigue in healthcare professionals (Noone and Hastings, 2011; Duarte & Pinto-Gouveia, 2017). Moreover, studies indicate that interventions based on ACT may be effective in reducing psychological distress and burnout in settings where staff face similar difficulties to FMH professionals (e.g. exposure to aggressive behaviour), such as intellectual disability and personality disorder services (McConnachie, McKenzie, Morris & Walley, 2014; Clarke, Taylor, Lancaster & Remington, 2015). Few studies have investigated the relationship between psychological flexibility and wellbeing in FMH professionals. Chabinska, Power, Whitefield and Ferreira (2016) found that psychological flexibility mediated the relationship between two job demands (control and understanding), and depersonalisation in nurses employed in secure FMH and intellectual disability services in Scotland. It is important to note that significant differences were observed with regards to job demands and psychological flexibility between the two groups of staff, but no adjustments were made in the analysis.

Cooper et al (2016) examined the relationship between several job demands (exposure to aggression and concerns about safety) and resources (attitudes towards aggression and psychological flexibility), and staff wellbeing (measured by turnover intent, psychological distress, compassion satisfaction, secondary traumatic stress and burnout) in staff employed in a high security FMH setting in Scotland. Beliefs about safety and psychological flexibility were the strongest predictors of wellbeing. Small correlations were demonstrated between exposure to violence and all domains of wellbeing and increased perceived exposure to violence and aggression predicted increased turnover intent. Small correlations were noted between sub-types of attitudes towards violence and some aspects of wellbeing (e.g. offensive attitudes were moderately correlated with reduced compassion satisfaction and weakly related to turnover desire). As this was the one of the first studies to explore the impact of job demands and resources on wellbeing in this population, consideration was not given to the hypothesis that attitudes towards violence may have an indirect relationship with wellbeing via other variables.

Negative attitudes towards violence and aggression are proposed to lead to an increased perceived occurrence of violent and aggressive incidents (Jansen, Middel, Dassen and Reijneveld, 2006) and studies conducted with general nurses have suggested an association between increased perceived experiences of violence and aggression and increased concerns about safety in the workplace (Erickson & William-Evans, 2000). Furthermore, increased safety concerns have been shown to predict decreased wellbeing in this population (Cooper et al, 2016). Therefore, past literature suggests that attitudes towards violence may have an indirect relationship on wellbeing through exposure to violence and beliefs about safety (see Figure A1). In terms of other factors which may impact on this relationship, psychological

flexibility has been identified as a moderator between job demands and psychological wellbeing in the general literature (Burchell, 2009). Although higher levels of psychological flexibility predict greater wellbeing in this population (Cooper et al, 2016), no research has been conducted to examine the potential moderating effect of psychological flexibility on wellbeing in FMH staff.

Figure A1: Hypothesised model of the indirect effect of attitudes on FMH professionals' wellbeing



Research into the wellbeing of FMH professionals, particularly in high security settings, is extremely limited. Staff working in forensic mental health settings are faced with several job demands which may impact on their wellbeing including frequent exposure to violence and aggression and concerns about safety. More research into the interactive effects of job demands and resources on wellbeing is required, to increase understanding about potential mechanisms for change; meaning effective interventions can be developed in the future to help increase staff

wellbeing. The aim of the current study is to use data collected from Cooper et al (2016) to investigate a) whether attitudes towards aggression have a direct effect on wellbeing and b) whether attitudes towards aggression have an indirect effect on wellbeing via exposure to violence and beliefs about safety. The third aim is to explore the potential moderating effect of psychological flexibility on these relationships.

Materials and methods

Design

This study used secondary, cross-sectional data initially collected by Cooper et al (2016), who investigated the relationship between staff safety beliefs, staff attitudes towards violence and aggression and psychological flexibility on the wellbeing of forensic mental health staff using correlations and multiple regression analysis.

Participants

Participants were healthcare staff (n= 142) with direct patient contact working at The State Hospital, a high security psychiatric hospital in Scotland, providing care for male patients with a history of violent offending and most commonly, a primary diagnosis of schizophrenia. Thirty five percent of eligible staff members (n=402) participated in the study. Demographic characteristics of the sample are outlined in Table A1. When the proportion of each staffing group in the sample was compared to that of the overall workforce, the sample was determined to be broadly representative (Cooper et al, 2016).

Table A2: Demographic characteristics of the sample

Variable	%
<i>Age</i>	
18-25	4.2
26-35	21.1
36-45	22.5
46-55	40.1
56+	9.2
<i>Gender</i>	
Male	47.2
Female	49.3
Prefer not to say	2.8
<i>Ethnicity</i>	
White British	47.9
White Scottish	46.5
Other White	1.4
Indian	0.7
Bangladeshi	0.7
Other	0.7
<i>Length of experience in Forensic settings</i>	
Less than a year	1.4
1-2 years	7.7
3-5 years	12.7
6-10 years	10.6
11-15 years	16.2
16-20 years	16.9
21+ years	33.1
<i>Role</i>	
Mental health nurse	45.8
Nursing assistant	19
Psychological services	11.3
Allied Health Professional	4.2
Skye Centre staff	4.2
Medical staff	3.5
Other	10.6
<i>Length of employment in current setting</i>	
Less than a year	4.9
1-2 years	7.7
3-5 years	12.7
6-10 years	12.7
11-15 years	17.6
16+ years	43.7
<i>% of contact time with patients</i>	

0-25%	12.7
26-50%	7
51-75%	15.5
76-100%	64.1

Recruitment

Participants were provided with information about the study via e-mail, posters, briefings and an information stall. An information sheet was provided to all participants who volunteered to take part in the study, which provided contact details for the Employee Support Service. Participants who were struggling with their work were advised to approach the service to seek support. Participation involved filling out anonymous online or paper questionnaires, including a demographic questionnaire and seven self-report questionnaires.

Procedure

Ethical approval for both the original study and current study was provided The University of Edinburgh, School of Health in Social Science Research Ethics Board. The State Hospital Research Committee provided R&D approval for the initial study and granted Caldicott Guardian approval. The lead author of the original study provided permission for secondary data analysis to be undertaken. The researcher was granted access to a fully anonymized database containing all information gathered from participants in the original study.

Materials

The following measures were used:

Demographic Questionnaire

In line with other research in this area, participants were asked to report their gender, age, relationship status, nationality, role, percentage of time engaging in direct patient contact, length of service and whether they had undertaken training in the prevention and management of violence and aggression.

The Perception of Prevalence of Aggression Scale (POPAS: Oud, 2000)

The POPAS contains eighteen items assessing participants' experiences of fifteen types of aggression in inpatient settings including non-threatening verbal aggression, threatening verbal aggression, humiliating aggressive behaviour, provocative aggressive behaviour, passive aggressive behaviour, threatening physical aggression, destructive aggressive behaviour, mild physical violence, severe physical violence, mild violence against the self, severe violence against the self, suicide attempts, completed suicide, sexual intimidation/harassment and sexual assault/rape. The items include definitions and outline examples of each type of aggression, and participants are asked to estimate the frequency in which they have experienced each type of aggression over the past year, initially on a five-point scale from 0 (never) to 5 (frequently) and then by providing an estimate of the number of times each behaviour has occurred. In the final item, participants are asked to estimate the number of days they have missed from work over the preceding year as a result of violence or aggression. This measure has been validated in samples of psychiatric nurses working in inpatient settings in the UK (Nijman, Bowers, Oud & Jansen, 2005; Jalil, Huber, Sixsmith & Dickens, 2017), and has demonstrated good internal consistency (Cronbach's alpha – 0.86: Nijman et al, 2005). The scale demonstrated excellent internal consistency in the original study from which the data for the current study was derived (Cronbach's alpha- 0.93: Cooper et al, 2016).

Work Safety Scale (WSS: Hayes, Perander, Smecko & Trask, 1998)

The WSS contains fifty items assessing employee's perceptions of work safety in five areas: job safety, co-worker safety, supervisor safety, management safety practices and satisfaction with the safety programme. Only the items from the job safety sub-scale were used for this study. Participants are provided with ten words and statements such as "risky", "could get hurt easily" and "chance of death" and asked to rate the extent to which each word or phrase described their job on a scale from 1 (strongly disagree) to 5 (strongly agree). The authors demonstrated high internal consistency (Cronbach's alpha – 0.88-0.92: Hayes et al, 1998). The scale demonstrated excellent internal consistency in this sample (Cronbach's alpha- 0.91: Cooper et al, 2016).

Attitudes Towards Aggression Scale (ATAS: Jansen, Dassen, Burgerhof & Middel, 2006)

The ATAS consists of eighteen items assessing five types of attitudes towards aggression towards nursing staff: the offensive attitudes sub-scale measures attitudes that aggression is harmful, unpleasant and unacceptable; destructive attitudes items define aggression as an act which causes physical harm; intrusive attitudes items assess the view that aggression is an expression of intent to harm; the communicative attitudes sub-scale measures attitudes that aggression is a signal of distress; and protective attitudes items assess the perception of aggression as an attempt to defend physical or emotional space. Participants are asked to rate the extent to which they agree with each statement from 1 (totally disagree) to 5 (totally agree). The scale has been validated in samples of psychiatric nurses (Jansen et al, 2006: Jansen, Middel & Dassen, 2005: Tomagova, Borikova, Lepisova & Cap, 2016), demonstrating acceptable to good validity (Cronbach's alpha – 0.60-0.86: Jansen et al, 2006). In the current sample, reliability was acceptable for four of the scales (Cronbach's alpha- 0.642-0.795) and borderline for the

remaining scale: the protective scale (Cronbach's alpha – 0.591: Cooper et al, 2016). For the current study, the scales from scores were combined to create a “positive” attitudes score, and a “negative attitudes” score.

Work Related Acceptance and Action Questionnaire (WAAQ: Bond, Lloyd & Guenole, 2012)

The WAAQ contains seven items measuring workplace psychological flexibility. Participants are asked the extent to which statements such as “my thoughts and feelings do not get in the way of my work” are true on a seven-point scale from 1 (never true) to 7 (always true). The authors report good internal consistency (Cronbach's alpha – 0.83: Bond et al, 2012). The scale demonstrated good reliability in the current sample (Cronbach's alpha- 0.89).

Professional Quality of Life Scale (ProQOL: Stamm, 2009)

The ProQOL contains 30 items and is comprised of three sub-scales. The first sub-scale consists of ten items and measures compassion satisfaction; the pleasure gained from doing work well. Higher scores reflect increased satisfaction with the ability to care for others effectively. The second sub-scale measures burnout which is defined as feelings of hopelessness and difficulties dealing with work or effectively carrying out duties at work. The third sub-scale measures secondary traumatic stress: work-related secondary exposure to trauma. Participants are asked to rate how frequently they have experienced each item over the past 30 days on a five-point scale from 1 (never) to 5 (very often). The sub-scales have demonstrated good reliability with Cronbach's alpha for compassion satisfaction, burnout and secondary traumatic stress reported as 0.88, 0.75 and 0.81 respectively (Stamm, 2009). Similarly, good reliability was demonstrated in the current sample (Cronbach's alpha – 0.92, 0.76, 0.82 respectively).

Kessler Psychological Distress Scale (K6: Kessler et al, 2002)

The K6 contains six items in which participants rate how often they have felt the way stated in the item (e.g. so depressed that nothing could cheer you up) over the past month on a five-point scale from 0 (never) to 5 (all of the time). The authors report excellent internal consistency (Cronbach's alpha = 0.89: Kessler et al, 2002) and several studies have found that the scale is significantly better at identifying the presence of anxiety and depression than alternative measurement tools (Furukawa, Kessler, Slade & Andrews, 2003; Sakurai, Nishi, Kondo, Yanagida & Kawakami, 2011). Excellent reliability was reported in the current sample (Cronbach's alpha: 0.90).

Turnover desire (Cooper et al, 2016)

In the initial study, turnover intent was measured by a scale developed by Kelloway, Gottlieb and Barham (1999). This scale consisted of four statements and participants rated the degree to which they agreed with each statement. The measure demonstrated excellent reliability (Cronbach's alpha- 0.93). As participants were employed in a high security environment, they received monthly enhanced payments, and it was recognised that staff may not leave their current role as this may mean accepting a reduction in salary. Therefore, an additional item was added to the original scale to ensure that a desire to leave would be captured, regardless of whether the individual would be likely to act on this: 'I would like to leave my role if I was able to maintain my current package of pay and benefits (including overtime availability / clinical and environmental allowance payments) in a role out-with secure forensic mental health services.' Internal consistency of the scale remained excellent with the inclusion of this additional item (Cronbach's alpha – 0.92). However, Cooper et al (2016) found that turnover intention did not correlate with any of the predictor variables, whereas turnover desire (measured using the

additional question) correlated with several predictor variables. Therefore, it was concluded that the items measured different constructs. As the measure of turnover intent did not correlate with any of the other variables, it will not be investigated in the current study.

Analysis

To meet the assumptions of serial mediation, Pearson's correlation co-efficients will be calculated between the hypothesised predictor, mediator and dependent variables and between mediators as recommended by Hayes (2013). Following this, models of serial mediation will be tested using the PROCESS macro for SPSS (Hayes, 2018). These models will estimate the direct and indirect effect of attitudes towards violence and aggression on staff wellbeing outcomes (see Figures 1-5). If the serial mediation path is significant, the moderating effect of psychological flexibility will be tested using a model of moderated serial mediation. Indirect effects and the presence of moderated mediation will be investigated with 95% bias-corrected confidence intervals based on 10,000 bootstrap samples as recommended by Hayes (2013, 2015). Confidence intervals which straddle zero will be considered insignificant.

As Cooper et al (2016) found that several demographic variables significantly predicted wellbeing, these variables were entered as co-variates. The length of time that staff had been employed at the high secure hospital for was entered as a co-variate in the burnout and turnover desire models and percentage of contact time with patients was entered as a co-variate in the psychological distress model.

Calculating the power to detect conditional indirect effects is complex and research into this is limited (Preacher, Rucker & Hayes, 2007). The a priori power calculation

from the original study determined that a minimum sample of 135 participants was required to detect a medium effect size when completing regression analyses with 14 predictor variables (Soper, 2016). As serial mediation and moderated serial mediation are based on several linear regressions, the sample size required for regression was considered adequate for the current analyses.

Results

Correlational analysis

Correlations between variables are displayed in Table A2. Significant correlations were identified between the hypothesised mediators (perceived exposure to violence and aggression and safety beliefs), negative attitudes towards aggression and wellbeing. Additionally, partial correlation between exposure to aggression and safety beliefs was demonstrated when controlling for negative attitudes ($r = .489$, $p < .001$). These results strengthen the rationale for testing a model of serial mediation. In contrast, no significant correlations were found between the hypothesised mediators and positive attitudes towards aggression, meaning the assumptions of serial mediation could not be met. For this reason, positive attitudes were excluded from further analysis.

Table A2: Correlations between predictor and outcome variables, and partial correlations between potential mediating variables

Predictor Variables	Outcome variables						
	Exposure	Safety beliefs	Psych distress	BO	CS	STS	TO Desire
<i>Negative attitudes</i>	.367**	.342**	.068	.146	-.325**	.028	.182*
<i>Positive attitudes</i>	-.034	-.004	-.028	-.037	.168*	.06	.005
<i>Exposure to violence/aggression</i>	-	.553**	.249	.285**	-.290**	.226**	.307**
<i>Safety beliefs</i>	-	-	.457**	.545**	-.428**	.459**	.316**
Partial Correlation-negative attitudes controlled							
<i>Exposure</i>	-	.489**	-	-	-	-	-

Key: BO = Burnout, CS = Compassion Satisfaction, STS = Secondary Traumatic Stress, TO desire = turnover desire

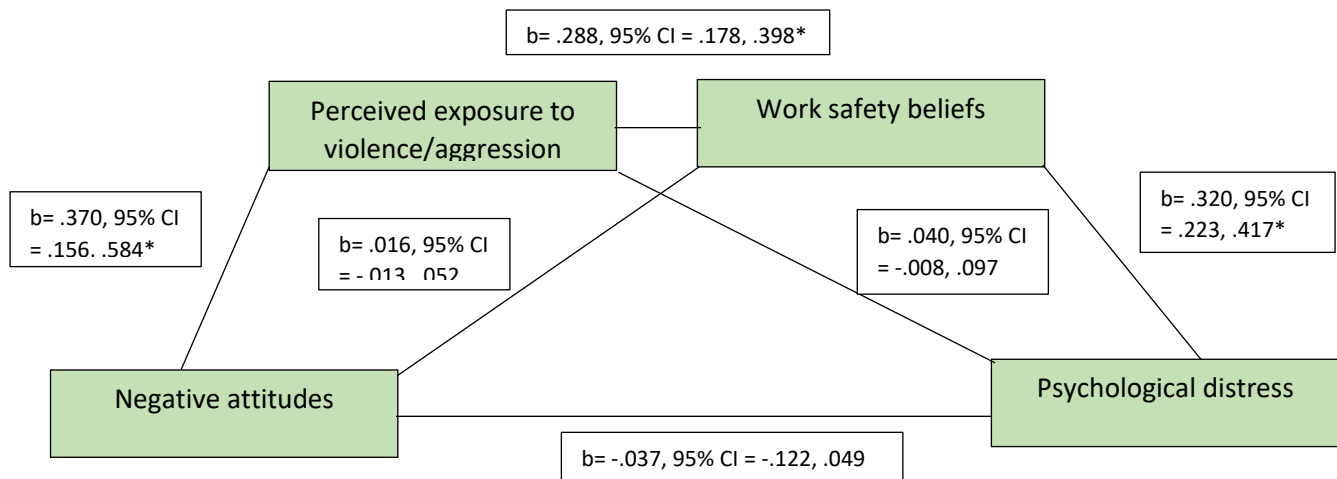
Serial mediation analysis

Psychological distress

The overall regression model predicting psychological distress from negative attitudes towards aggression, perceived exposure to aggression and safety beliefs, with percentage of contact with patients included as a co-variate, was significant, explaining 31.5% of the variance in psychological distress ($r^2 = .315$, $F(4, 137) = 15.746$, $p < .001$). As can be seen in Figure A2, the direct path from negative attitudes to psychological distress was not significant. The serial mediation path from increased negative attitudes to increased psychological distress through increased perceived exposure to aggression and increased concerns about safety was significant ($b = .034$, $SE = .014$, $95\% \text{ CI} = .012, .064$). The presence of an indirect

effect in the absence of a direct effect indicates full mediation (Baron & Kenny, 1986).

Figure A2: Serial mediation model for psychological distress

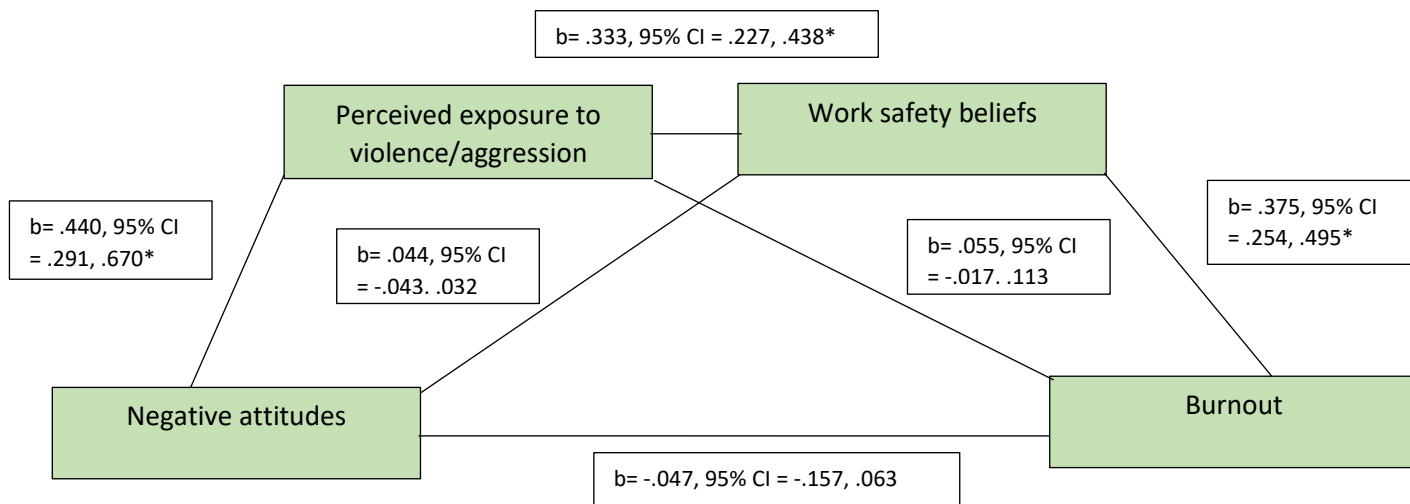


Note: * denotes significance

Burnout

The overall regression model predicting burnout from negative attitudes towards aggression, perceived exposure to aggression and safety beliefs, with length of employment included as a co-variate, was significant explaining 30.9% of the variance in burnout ($r^2 = .309$, $F(4, 137) = 15.304$, $p < .001$). As can be seen in Figure A3, the direct path from negative attitudes to psychological distress was not significant. The indirect path from increased negative attitudes to increased burnout through increased perceived exposure to aggression and increased concerns about safety was significant ($b = .055$, $SE = .021$, 95% CI = .020, .100), indicating full mediation.

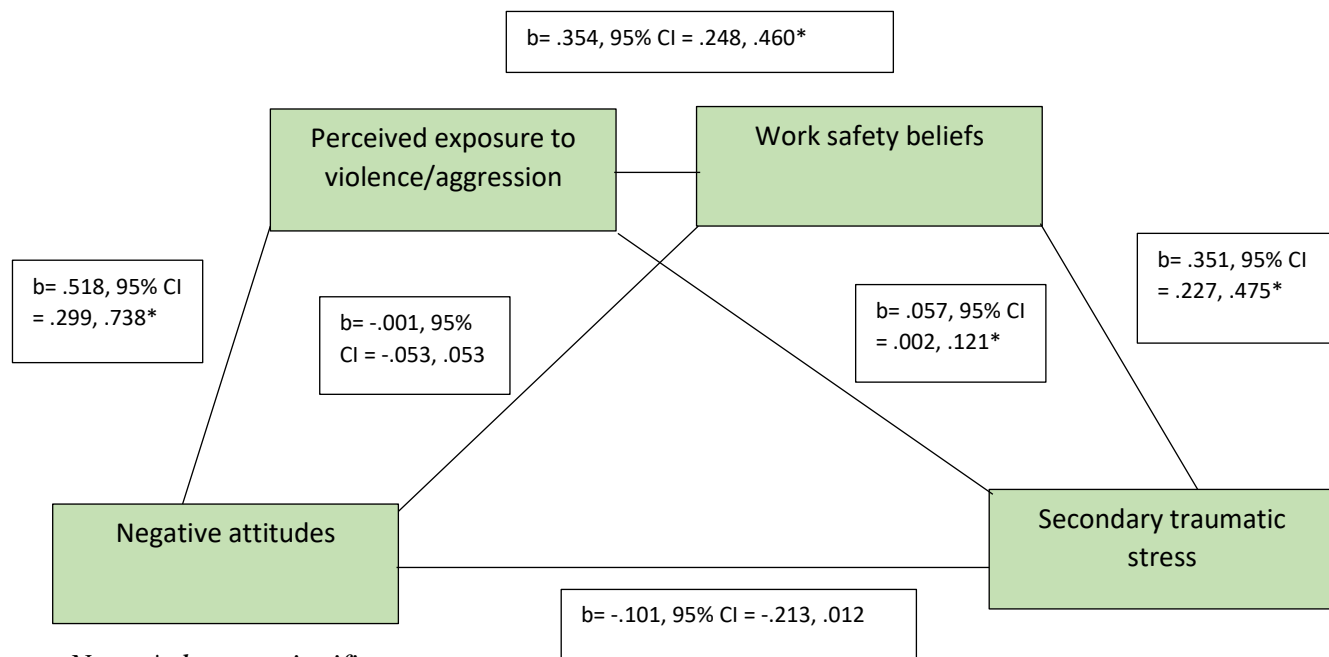
Figure A3: Serial mediation model for burnout



Secondary traumatic stress

The overall regression model predicting secondary traumatic stress from negative attitudes towards aggression, perceived exposure to aggression and safety beliefs was significant, explaining 23% of the variance in secondary traumatic stress ($r^2 = .300$, $F(3, 138) = 13.711$, $p < .001$). As displayed in Figure A4, there was no significant direct path from negative attitudes to secondary traumatic stress. The serial mediation path from increased negative attitudes to increased secondary traumatic stress through increased perceived exposure to aggression and increased safety beliefs was significant ($b = .064$, $SE = .023$, $95\% CI = .026, .117$), indicating full mediation.

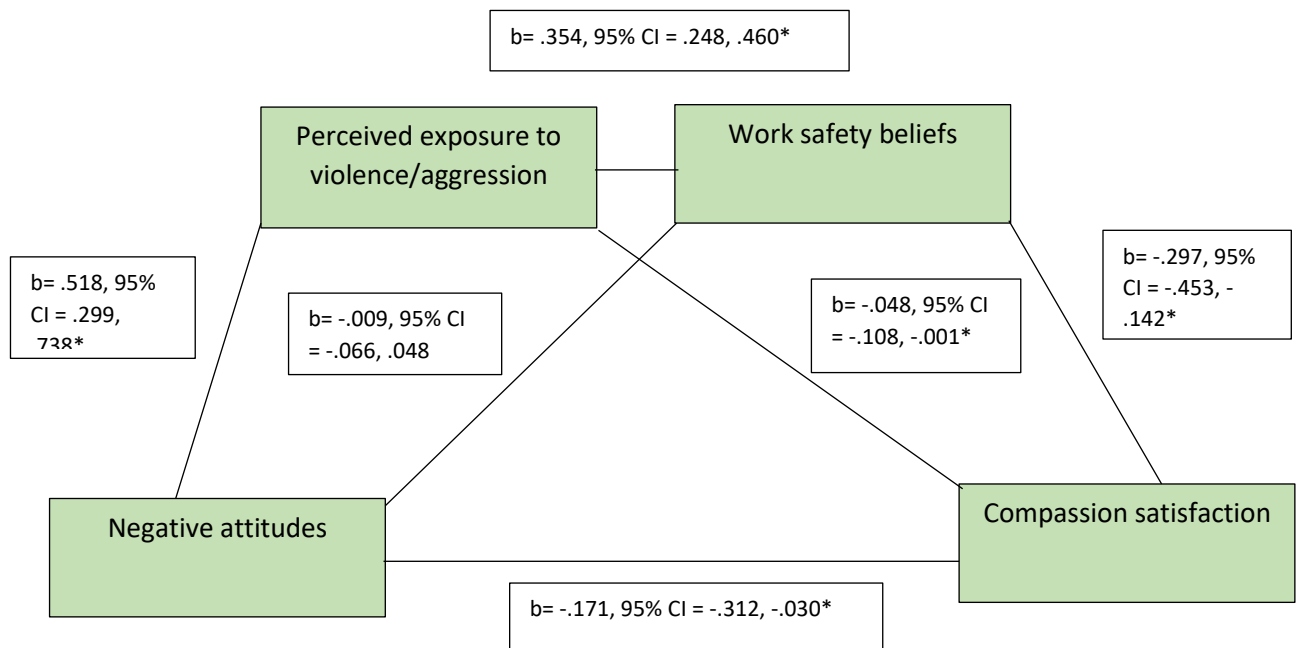
Figure A4: Serial mediation model for secondary traumatic stress



Compassion Satisfaction

The overall regression model predicting compassion satisfaction from negative attitudes towards aggression, perceived exposure to aggression and safety beliefs was significant, explaining 22% of the variance in compassion satisfaction ($r^2 = .220$, $F(3, 138) = 12.97$, $p < .001$). There is a significant direct effect of increased negative attitudes on decreased compassion satisfaction (as shown in Figure A5) and the serial mediation path from increased negative attitudes to decreased compassion satisfaction through increased perceived exposure to aggression and increased concerns about safety was also significant ($b = -.055$, $SE = .022$, 95% CI = -.102, -.017). These results indicate partial mediation.

Figure A5: Serial mediation model for compassion satisfaction

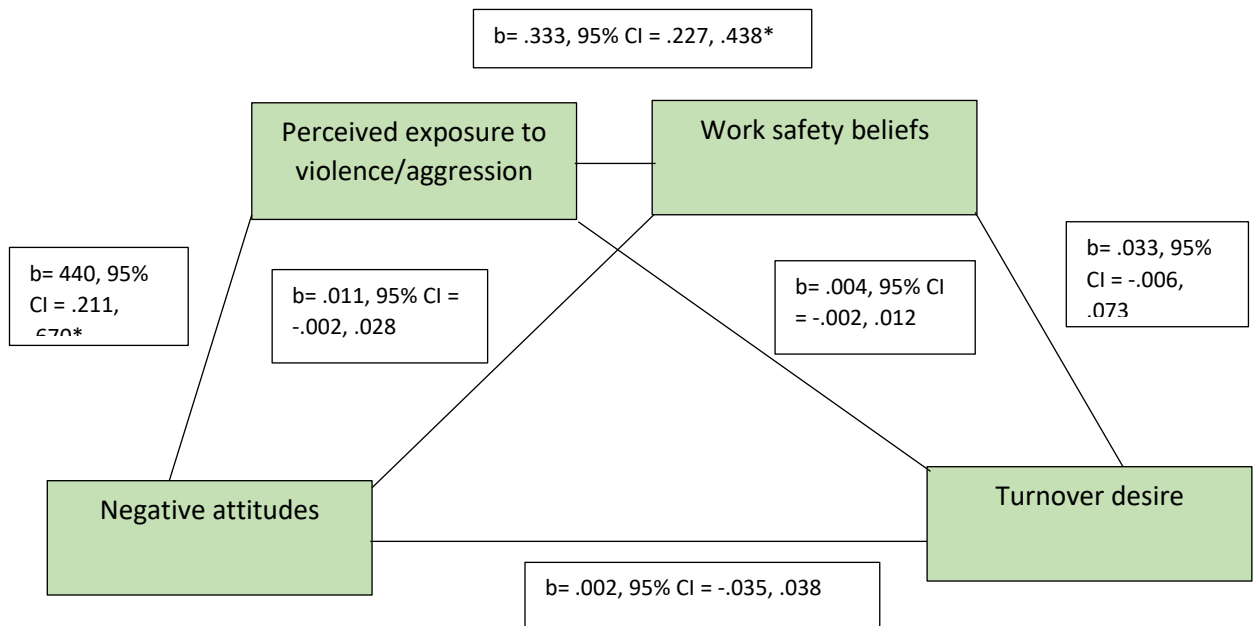


Note: * denotes significance

Turnover desire

The overall regression model predicting turnover desire from negative attitudes towards aggression, perceived exposure to aggression and safety beliefs, with length of employment included as a co-variate, was significant, explaining 15.3% of the variance in turnover desire ($r^2 = .153$, $F(4, 137) = 6.192$, $p < .001$). As shown in Figure A6, there was no significant direct path from negative attitudes to psychological distress. The indirect path from increased negative attitudes to increased turnover desire through increased perceived exposure to aggression and increased concerns about safety was also non-significant ($b = .005$, $SE = .003$, 95% CI = -.001, .013), indicating no mediation. Therefore, turnover desire was excluded from further analysis.

Figure A6: Serial mediation model for turnover desire



Note: * denotes significance

Moderated serial mediation

As the hypothesised serial mediation pathway was significant for the psychological distress, burnout, secondary traumatic stress and compassion satisfaction models, the full model of moderated serial mediation was tested for these outcomes. As shown in Table A3, there were no significant interactions between psychological flexibility and any of the other variables on burnout, secondary traumatic stress or compassion satisfaction. However, a significant interaction was demonstrated between psychological flexibility and work safety beliefs in the psychological distress model ($p < .05$, 95% CI = -.027 to -.003). Probing the nature of this interaction revealed that the strength of the effect of safety beliefs on psychological distress was at its greatest when psychological flexibility was at its' weakest. At one standard deviation above the mean psychological flexibility score (43.27), the weakest mediation occurred ($r =$

.168, 95% CI = .045, .291), at the mean level of psychological flexibility (36.51) the mediation effect was larger ($r = .269$, , 95% CI = .183, .355) and at one standard deviation below the mean (29.74), the mediation effect was higher ($r = .370$, , 95% CI = .260, .481). When psychological flexibility is lower, concerns about safety are more strongly associated with increased psychological distress than when psychological flexibility is higher.

Table A3: Interactions between predictor variables and psychological flexibility

Interaction		Co-efficient	P	95% CI
<i>Outcome: Psychological distress</i>				
Negative attitudes x PF		.014	.376	-.017 to .045
Perceived exposure x PF		-.003	.655	-.018 to .012
Safety beliefs x PF		-.015	.013*	-.027 to -.003
<i>Outcome: Burnout</i>				
Negative attitudes x PF		.020	.232	-.013 to .053
Perceived exposure x PF		-.008	.275	-.023 to .007
Safety beliefs x PF		-.013	.097	-.027 to .002
<i>Outcome: Secondary Traumatic Stress</i>				
Negative attitudes x PF		.019	.269	-.015 to .052
Perceived exposure x PF		-.008	.325	-.023 to .008
Safety beliefs x PF		-.016	.061	-.032 to .001
<i>Outcome: Compassion satisfaction</i>				
Negative attitudes x PF		.019	.269	-.015 to .052
Perceived exposure x PF		-.008	.325	-.023 to .008
Safety beliefs x PF		.015	.154	-.006 to .036

Note: PF = Psychological flexibility

Discussion

The aim of this study was to test a theoretical model of the direct and indirect effects of various job demands and resources on FMH professionals' wellbeing. Specifically, the study aimed to investigate the indirect effect of attitudes towards aggression on wellbeing via exposure to violence and beliefs about safety, and to explore the potential moderating effect of psychological flexibility on these

relationships. Overall, the findings of the current study supported the hypothesis that exposure to violence and beliefs about safety serially mediate the relationship between attitudes towards aggression and wellbeing (with the exception of turnover desire). Negative attitudes towards aggression only had a direct impact on compassion satisfaction, with increased negative attitudes associated with lower compassion satisfaction. Although previous studies have indicated a link between attitudes and staff wellbeing (Whittington, 2002; Whittington & Higgins, 2002), this is the first study to propose a mechanism through which attitudes may impact on wellbeing in FMH professionals.

Despite findings in the general literature indicating psychological flexibility acts as a moderator between job demands and wellbeing (Burchell, 2009), and evidence that psychological flexibility strongly predicts wellbeing in this population (Cooper et al, 2016), the results showed that psychological flexibility did not act as a moderator in the model tested for most aspects of wellbeing. Psychological flexibility did moderate the relationship between increased safety beliefs and increased psychological distress, with the relationship between these two variables being strongest when psychological flexibility was low. The finding that psychological flexibility did not act as a moderator for burnout, secondary traumatic stress and compassion satisfaction combined with the results from previous research suggest that psychological flexibility may play a different role than was hypothesised. For example, drawing on Schaufeli and Taris' (2014) revised JD-R model, individuals with high levels of psychological flexibility may be more likely to develop tolerant attitudes towards violence or increased perceived exposure to violence may affect an individuals' level of psychological flexibility which in turn impacts on safety beliefs and consequently, wellbeing. Further research to explore this role is required to

enhance our understanding of the underlying mechanism through which attitudes impact on staff wellbeing.

The indirect effect of attitudes may be partially explained by Jansen et al's (2006) theory that nurses' attitudes towards aggression and violence impact on their management of these behaviours or their precursors, consequently impacting on the occurrence of aggression. In line with this theory, previous research has indicated that nurses who view aggression as "harming" are more likely to use restrictive measures such as seclusion and restraint (Broers and De Lange, 1997). This is important as several studies have indicated that restrictive management strategies are often precursors to aggressive incidents (Wynn, 2003; Papadopoulos, Ross, Stewart, Dack, James & Bowers, 2012) and increased rates of aggression have been linked to a punitive atmosphere in inpatient settings (Bowers et al, 2009).

Furthermore, a link between increased experiences of assault and increased concerns about safety has been established in the literature (Poster & Ryan, 1994) and safety beliefs have been shown to be strong predictors of wellbeing in this population (Cooper et al, 2016). Importantly, the results of the current study provide preliminary support for a model whereby attitudes indirectly affect FMH professionals' wellbeing through exposure to aggression and their own safety beliefs. This model identifies several targets for intervention to improve employee wellbeing. Given that the general literature suggests that decreased staff wellbeing leads to higher sickness absence and poorer quality patient care (Johnson et al, 2018), the benefits of developing effective interventions to improve FMH professionals' wellbeing are clear.

Whilst Cooper et al (2016) concluded that cognitive interventions aimed at improving staff wellbeing through the development of more tolerant attitudes

towards aggression may not be effective, the results of the current study suggest that interventions of this nature may have some utility in this population. In terms of other clinical implications, the finding that psychological flexibility moderated the relationship between increased safety concerns and decreased wellbeing suggests that interventions based on ACT may be effective in improving employee wellbeing. Although it may be difficult to control staff's exposure to aggression and subsequent concerns about safety, it would be relatively simple to implement an intervention focused on increasing psychological flexibility, benefiting both FMH professionals and their employers. This finding is in line with previous research which has demonstrated that ACT-based interventions have led to reductions in psychological distress in staff members working in settings where they face similar difficulties to FMH professionals (McConnachie et al, 2014; Clarke et al, 2015).

This study is the first to investigate the interactive effects of several job demands and resources on the wellbeing of staff working in forensic mental health services. The results build on those of previous research and lead to an increased understanding of potential mechanisms for change. However, the study does have several limitations that should be noted. Firstly, the study relied exclusively on the use of self-report measures, which could increase the risk of bias due to under or over-reporting. Furthermore, the original version of the WAAQ, the AAQ, has faced criticism over the wording of some of the items which have been described as confusing for individuals who are not familiar with ACT (Bond et al, 2011). However, the WAAQ is the only measure of psychological flexibility specifically developed to measure this construct in the context of the workplace. As participants were recruited from a high secure setting, the results may not be generalizable to other forensic settings including low and medium secure wards. Despite the limitations, research into staff

wellbeing in high secure settings is extremely limited and more research conducted with this population is clearly warranted. Another important limitation is the use of convenience sampling. The characteristics of the staff who chose not to participate is unknown, and therefore, results may be biased in this regard. Finally, calculating the power to detect conditional indirect effects is complex and research into this is limited (Preacher et al, 2007). It was assumed that the sample size required for multiple regression would be adequate for the current analysis given that moderation and mediation are based on regression: however, the potential for the study to be under-powered remains a possibility given how little is known about power calculations for the statistical techniques used.

Conclusions

The findings of this study provide preliminary support that staff who hold less tolerant views of aggressive behaviours (e.g. view aggressive behaviours as an expression of intent to cause harm as opposed to viewing them as a signal of distress) may perceive themselves as being exposed to aggression more frequently, leaving them more vulnerable to increased fears for their safety and leading to reduced wellbeing. When this is coupled with low levels of psychological flexibility, the association between increased fears about safety and increased psychological distress is even stronger. Further research is needed to explore the role of psychological flexibility in the relationship between job demands and other aspects of wellbeing in this population, and research replicating the results of this study in FMH professionals working in other forensic settings is required (e.g. low/medium security settings). Despite this, the results indicate that interventions based on ACT, which focus on changing the way staff relate to difficult thoughts and feelings rather

than attempting to change the thoughts and feelings themselves, may be effective in improving wellbeing in this population.

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Appendix B: Highlights for systematic review (mandatory for journal)

Highlights:

- The relationship between coping and emotion regulation strategies, and burnout, was examined.
- Increased mindfulness and acceptance were associated with decreased burnout.
- Use of escape-avoidance or maladaptive coping strategies was linked to increased burnout.
- Mindfulness and emotion-focused coping predicted decreased burnout.
- Use of maladaptive coping strategies predicted increased burnout.

Appendix C: Example of search strategy using the OVID platform

Search	
1	accept* or avoid* or reapprais* or “problem solv*” or ruminat* or suppress* or “emotion regulation” or mindful* or coping [mp = title, abstract, heading word, table of contents, key concepts, original title, tests and measures, mesh]
2	burnout or “occupational stress” or “work stress” or “job stress” or “emotional exhaustion” or exhaustion or depersonalisation or “personal accomplishment” or accomplishment [mp = title, abstract, heading word, table of contents, key concepts, original title, tests and measures, mesh]
3	personnel or professional* or worker or staff or employ* or clinician or practitioner* or nurs* or psycholog* or psychiatr* or physician* or medic* or counsellor or therapist or psychotherapy* [mp = title, abstract, heading word, table of contents, key concepts, original title, tests and measures, mesh]
4	“mental health” or “learning disab*” or “intellectual disab*” [mp = title, abstract, heading word, table of contents, key concepts, original title, tests and measures, mesh]
5	1 AND 2 AND 3 AND 4
6	Remove duplicates from 5
7	Limit 6 to year 1981-current
8	Limit 7 to English
9	Limit 8 to Human

Appendix D: Adapted Quality Criteria Checklist

Quality Assessment Checklist (adapted from Downs & Black, 1998)

Reporting

1. Is the hypothesis/aim/objective of the study clearly described?

Yes – 1 No – 0

2. Are the main outcomes to be measured clearly described in the introduction or methods section? (If the main outcomes are first mentioned in the Results section, the question should be answered no)

Yes – 1 No – 0

3. Are the characteristics of the participants included in the study clearly described? (In cohort studies and trials, inclusion and/or exclusion criteria should be given)

Yes- 1 No – 0

4. Are the main findings of the study clearly described? (Simple outcome data (including denominators and numerators) should be provided for all major findings so that the reader can check the major analyses and conclusions)
This question does not cover statistical tests which is covered below

Yes – 1 No – 0

5. Does the study provide estimates of the random variability in the data for the main outcomes? (In non-normally distributed data, the inter-quartile range of results should be reported. In normally distributed data the standard error, standard deviation or confidence intervals should be reported. If the distribution of data is not described, it must be assumed that the estimates used were appropriate and the question should be answered yes)

Yes – 1 No – 0

External validity

All the following criteria attempt to address the representativeness of the findings of the study and whether they may be generalised to the population from which the study subjects were derived.

6. Were the subjects who were asked to participate in the study representative of the entire population from which they were recruited? (The study must identify the source population for participants and describe how the participants were selected. Participants would be representative if they comprised the entire source population or a random sample. Random sampling is only feasible where a list of all members of the relevant population exists. Where a study does not report the proportion of the source population from which the participants are derived, the question should be answered as unable to determine.)

Yes – 1 No – 0 unable to determine – 0

7. Were those subjects who were prepared to participate representative of the entire population from which they were recruited? (The proportion of those asked who agreed should be stated. Validation that the sample was representative would include demonstrating that the distribution of the main confounding factors was the same in the study sample and the source population).

Yes – 1 No – 0 unable to determine – 0

Internal validity

8. If any of the results in this study were based on “data dredging”, was this made clear? (Any analyses that had not been planned at the outset of the study should be clearly indicated. If no retrospective unplanned subgroup analyses were reported, then answer yes)

Yes – 1 No – 0 unable to determine – 0

9. Were the statistical tests used appropriate? (The statistical tests used must be appropriate to the data. For example, non-parametric tests should be used for small sample sizes. When little statistical analysis has been undertaken but where there is no evidence of bias, the question should be answered yes. If the distribution of the data (normal or not) is not described it must be assumed that the estimates used were appropriate and the question should be answered yes.)

Yes – 1 No – 0 unable to determine – 0

10. Was the outcome measure used to assess burnout reliable and valid? (For studies where the outcome measure is clearly described, the question should be answered yes. For studies which refer to other work or that demonstrates

the outcome measure is reliable and valid, the question should be answered yes)

Yes – 1 No – 0 unable to determine – 0

11. Were the outcome measures used to assess emotion regulation or coping reliable and valid? (For studies where the outcome measures are clearly described, the question should be answered yes. For studies which refer to other work or that demonstrates the outcome measures are reliable and valid, the question should be answered yes)

Yes – 1 No – 0 unable to determine – 0

12. Was there adequate adjustment for confounding in the analyses from which the main findings were drawn? (If the effect of the main confounders was not investigated or confounding was demonstrated but no adjustment was made in the final analyse, the question should be answered as no)

Yes – 1 No – 0 unable to determine – 0

Power

13. Did the study have sufficient power to detect a clinically important effect where the probability value for a difference being due to chance is less than 5%?

2 – Power calculation reported, and sample size was adequate

1 – Power calculation reported, and adequate sample size not met OR power can be calculated from the data provided and sample size determined to be adequate

0 – Power can be calculated from the data provided but calculations determined that the sample size was not adequate OR power calculation not reported, and insufficient data provided to calculate power

Appendix E: Characteristics of studies table

Table A1: Characteristics of studies included within the review

Authors, year published and country	Sample size and characteristics	Outcome measures and reported reliability/validity	Research design and statistical analysis	Results
Aitken and Schloss (1994); Australia	Employees of a government department for the care of people with an intellectual disability (n= 150); 65% female, 35% male; 97 direct care workers, 24 therapy staff and 11 managerial staff; no further demographic information provided	Burnout – MBI (Cronbach’s alpha not reported) Coping – Personal Resources subscale; OSI (Cronbach’s alpha not reported)	Pearson’s correlation coefficient	Statistically significant positive correlations between recreation and self-care, and personal accomplishment (r=0.22, p<0.05), and rational/cognitive coping and personal accomplishment (r=0.36, p<0.01). Statistically significant negative correlations between PRQ total and emotional exhaustion and depersonalisation (r= -.034, -0.31, p<0.01), and a statistically significant positive correlation between PRQ total and personal accomplishment (r= 0.30, p<0.01). Statistically significant negative correlations recreation and emotional exhaustion (r= -0.26, p<0.05), social support and

				emotional exhaustion ($r = -0.28$, $p < 0.01$), social support and depersonalisation ($r = -0.29$, $p < 0.01$), rational/cognitive coping and emotional exhaustion ($r = -0.30$, $p < 0.01$) and rational/cognitive coping and depersonalisation ($r = -0.25$, $p < 0.05$).
Askey-Jones (2018); UK	Allied health professionals ($n=86$); 76% female, 24% male; mean age = 45.7 years, age range = 28-63 years; 95% White British; mean length of experience post-qualification = 14 years, range of length of experience = 0-38 years	Burnout – MBI (Cronbach's alpha reported as 0.84) Emotion Regulation – FMI-14 (Cronbach's alpha reported as 0.81)	Pearson's correlation coefficient	Statistically significant small negative correlations between mindfulness and emotional exhaustion ($r = -0.25$, $n=81$, $p < 0.022$) and mindfulness and depersonalisation ($r = -0.27$, $n=83$, $p < 0.016$), and a statistically significant small positive correlation between mindfulness and personal accomplishment ($r = 0.26$, $n=83$, $p < 0.020$).
Devereux, Hastings, Noone, Firth and Totsika (2009); UK	Staff members employed at an NHS residential hospital site and a small community based unit for adults with an intellectual disability ($n=96$); 69% female, 31% male; mean age = 38.5 years; 81% residential hospital staff, 10% day service staff from the hospital, 9% small	Burnout – MBI-HSS (Cronbach's alpha reported for EE, DP and PA as 0.87, 0.52 and 0.78 respectively) Coping- Shortened Ways of Coping Questionnaire (Cronbach's alpha reported for practical coping and wishful thinking as 0.65 and 0.61 respectively;	Multiple regression Mediation analysis	Wishful thinking coping was a significant positive predictor of emotional exhaustion ($\beta = 0.422$, $p = .000$). Wishful thinking mediated the effect of perceived work demands on emotional exhaustion

	community unit staff; 47% qualified nursing staff, 53% healthcare assistants; 17% of healthcare assistants had an NVQ3 level qualification in caring; mean length of experience = 14.1 years	when two items with lowest corrected item-total correlations were removed for each scale, Cronbach's alpha was reported for practical coping and wishful thinking as 0.67 and 0.63 respectively)		(point estimate for indirect effect = 0.092; 95% CI = 0.044, 0.161).
Di Benedetto and Swadling (2014); Australia	Australian registered psychologists (n=167); 87% female, 13% male; mean age = 42.47 years, age range = 24-68; 87 working in private practice and 80 working in the public sector; 78% married, 16% single, 6% divorced/widowed; mean years of practice = 12.31 years (private sector) and 10.33 years (public sector)	Burnout – CBI (Cronbach's alpha reported as 0.92) Emotion regulation – FFMQ (Cronbach's alpha reported as 0.92)	Pearson's correlation coefficient	Statistically significant strong negative correlation between overall mindfulness and overall burnout ($r = -0.50$, $p < .0003$), and non-judging and overall burnout ($r = -0.51$, $p < .0003$). Statistically significant negative correlations between describing, acting with awareness and non-reacting and overall burnout ($r = -0.34$; $r = -0.43$; $r = -0.41$ respectively; all $p < .0003$). Statistically significant negative correlation between describing, acting with awareness, non-judging, non-reacting and overall mindfulness, and personal burnout ($r = -0.26$; $r = -0.40$; $r = -0.38$; $r = -0.40$; $r = -0.42$ respectively; all $p < .0003$). Statistically significant negative

				<p>correlation between describing, acting with awareness, non-judging, non-reacting and overall mindfulness, and work-related burnout ($r = -0.37$; $r = -0.40$; $r = -0.49$; $r = -0.38$; $r = -0.48$ respectively; all $p < .0003$). Statistically significant negative correlation between describing, acting with awareness, non-judging, non-reacting and overall mindfulness, and client-related burnout ($r = -0.27$; $r = -0.33$; $r = -0.49$; $r = -0.30$; $r = -0.41$ respectively; all $p < .0003$).</p>
Freedman and Tuval-Mashiach (2018); Israel	<p>Individuals working in the therapy professions ($n=151$); social workers (21%), psychologists (60%), psychiatrists (4%) and other (social work and psychology interns, counsellors: 15%); 80% female, 20% male; geographical location = south (20), centre (85), north (12); age ranges = 18-35 years = 35% (south), 43% (rest of country), 36-45 years = 35% (south), 27% (rest of country), 46+ years</p>	<p>Burnout – MBI (Cronbach's alpha for EE, DP and PA were reported as 0.8, 0.8 and 0.7, respectively)</p> <p>Coping – Brief COPE (Cronbach's alpha not reported)</p>	Pearson's correlation coefficient	<p>Statistically significant negative correlation between disengagement and personal accomplishment ($r = -0.29$, $p < .001$). Statistically significant negative correlations between disengagement, planning, acceptance and instrumental support, and emotional exhaustion ($r = -0.18$; $r = -0.18$; $r = -0.22$; $r = -0.20$ respectively: all $p < .05$). Statistically significant negative</p>

	<p>= 30% (south), 30% (rest of country); mean number of participants with no children = 2.83 (south), 2.57 (rest of country); marital status = single – 0% (south), 13% (rest of country), married- 85% (south), 72.5% (rest of country), divorced – 15% (south), 14.5% (rest of country); SES = below average – 25% (south), 27% (rest of country), average – 40% (south), 24% (rest of country), above average – 35% (south), 50% (rest of country); length of experience= <2 years – 15% (south), 19% (rest of country), 2-5 years – 20% (south), 16% (rest of country), 6-10 years – 10% (south), 19% (rest of country), 10+ years – 55% (south), 45% (rest of country)</p>		Multiple regression	<p>correlation between ventilation and emotional exhaustion ($r = -0.26$, $p < .01$).</p> <p>Ventilation was a significant predictor of emotional exhaustion ($\beta = -0.90$, $p < .05$).</p>
Mascha (2007); UK	<p>Direct care staff of four adult day services (n=36); 11 day-service assistants, 17 day-service officers and 8 senior officers; 61% female, 29% male; 55.5% married, 14% single, 30.5% divorced/separated; 55.5% had received training</p>	<p>Burnout – MBI (Cronbach's alpha for EE, DP and PA were reported as .0.94, 0.80 and 0.63 respectively)</p> <p>Coping – SWC-R (Cronbach's alpha for wishful thinking and</p>	Pearson's correlation coefficient	<p>Statistically significant negative correlation between wishful thinking and personal accomplishment ($r = -0.447$, $P < .01$) and statistically significant positive correlation between wishful thinking</p>

	relevant to the field of intellectual disability; 33% had finished high school, 28% had proceeded to further education, 39% had attended university	practical coping were reported as 0.76 and 0.69 respectively)		and emotional exhaustion ($r = 0.5$, $p < .01$).
Mitchell and Hastings (2001); UK	Care staff from 23 community residences within five service organisations for adults with mental retardation ($n = 83$); 54% female, 46% male; mean age = 32.43 years; 73% White, 10% Black African, 4% Black Caribbean, 2% Black Other, 2% Asian, 7% Other; mean length of experience working in intellectual disabilities = 68.95 months; mean number of hours worked per week = 37.66; percentage with a formal qualification in intellectual disabilities = 33%	Burnout – MBI (Cronbach’s alpha not reported) Coping – COPE (Cronbach’s alpha not reported)	Regression analysis	Disengagement coping significantly predicted emotional exhaustion ($\beta = 0.21$, $p < .05$). Disengagement coping and adaptive coping significantly predicted personal accomplishment ($\beta = -0.30$, $p < .01$; $\beta = 0.28$, $p < .05$ respectively).
Noone and Hastings (2011); UK	Support staff working in NHS residential community-based services for adults with intellectual disabilities ($n = 59$); 37% female, 63% male; mean age = 43.59 years, age range = 24-62 years; mean length of experience in intellectual disability services = 12.55	Burnout – MBI-HSS (Cronbach’s alpha not reported) Emotion regulation – AAQ-II (Cronbach’s alpha reported as 0.83; 0.88 when two items with poor corrected item-total correlations were removed)	Pearson’s correlation coefficient	Statistically significant negative correlation between acceptance and emotional exhaustion ($r = -0.399$, $p = .002$).

	years, range of length of experience = 1.5 – 40 years; average hours worked per week = 38.95 hours; 44% had qualifications relevant to the care of individuals with intellectual disabilities; 14% had some managerial responsibilities, 86% did not			
Thompson, Amatea and Thompson (2014); USA	Licensed mental health counsellors (with a master's degree in counselling) (n= 213); 76% female, 14% male; age range = 24 -78 years (25 years and younger (4%), 26-35 years (28%), 36-45 years (17%), 46-55 years (19%), 56-65 years (25%), 66+ years (7%)); 84% White/Caucasian, 9% Black/African American, 4% Latino, 0.5% Asian, 2% multi-ethnic; 62% married, 13% single, 15% in a relationship, 8% divorced, 2% widowed; mean length of experience = 12.58 years, range of length of experience = 0.5-53 years; 32% private practice, 31% community mental health agencies, 6% college counselling centres, 5% substance abuse treatment centres, 3% hospital	<p>Burnout – Burnout subscale- ProQOL (Cronbach's alpha reported as 0.79)</p> <p>Coping – Brief COPE (Cronbach's alpha for emotion-focused coping, problem-focused coping and maladaptive coping reported as 0.75, 0.83 and 0.75 respectively)</p> <p>Emotion regulation – MAAS (Cronbach's alpha reported as 0.92)</p>	<p>Pearson's correlation coefficient</p> <p>Hierarchical regression analysis</p>	<p>Statistically significant positive correlation between maladaptive coping and burnout ($r=0.466$, $p<.001$).</p> <p>Statistically significant negative correlation between mindfulness and burnout ($r= -0.219$, $p<.001$).</p> <p>Mindfulness, emotion-focused coping and maladaptive coping significantly predicted burnout ($\beta= -0.227$, $p<.001$; $\beta= -0.612$, $p=.002$; $\beta=0.199$, $p<.001$ respectively).</p>

	settings, 1% crisis stabilisation units, 1% career counselling centres, 21% other; working hours per week – 36-40 hours (41%), 20-25 hours (12%), 26-30 hours (9%), 31-35 hours (9%), 41-45 hours (14%), 46-50 hours (7%), 51-55 hours (4%), 56-60 (2%), 61-65 hours (0.5%), 66-70 hours (0.5%), 80-85 hours (1%); geographical location = Florida (21%), Alabama (13%), Ohio (9%); 56% members of the ACA, 38% members of the AMHCA			
Thornton (1992); USA	Full time, direct care, professional mental health workers employed in inpatient and outpatient services of a large state psychiatric centre (n=234): psychiatrists (31), psychologists (30) social workers (83), psychiatric nurses (47), rehabilitation counsellors (17), recreation therapists (17), occupational therapists (5), home care workers (4); 67% female, 33% male; 45% inpatient staff, 55% outpatient staff; 54% had been working in	Burnout – MBI (Cronbach's alpha not reported) Coping – WCC-revised (Cronbach's alpha not reported)	Canonical correlation analysis and Dimension Reduction Analysis	Overall test of the relationship between coping efforts and burnout symptoms was significant ($F(24, 647.37) = 4.24$, Wilk's lambda = 0.66, $p < .001$), suggesting 34% of shared variance between the two variables. Dimension reduction analysis suggested the presence of one statistically significant canonical correlation indicating one linear

	their profession for less than 10 years, 46% had been working in their profession for more than 10 years			relationship between sets ($R_c = 0.56$). Escape-avoidance loaded high on the canonical variable representing coping ($r = -0.95$): EE, DP and PA loaded high on the canonical variable representing burnout ($r = -0.72$, $r = -0.79$, $r = -0.67$ respectively). Higher scores on all three dimensions of burnout were associated with higher escape-avoidance.
Yang, Meredith and Khan (2017): Singapore*	Mental health professionals ($n=224$); Nurses (37.5%), Occupational therapists (15.6%), Psychiatrists (12.1%), Social workers (10.7%), Case managers (10.2%), Psychologists/counsellors (6.3%), Others (7.6%); 28% male, 72% female; age groups – under 25 (7.8%), 25-30 (29.7%), 30-35 (21.9%), 35 and over (40.6%); 72.6% Chinese, 6.8% Malay, 12.8% Indian, 7.8% Other; Marital status = Single (48.4%), Married (47.5%), Other (4.1%); Education level = Diploma	Burnout – OLBI (Cronbach's alpha not reported) Emotion Regulation – FFMQ (Cronbach's alpha not reported)	Regression	Each of the five facets of mindfulness was a significant predictor of emotional exhaustion: observe ($t = -2.99$, $p < .001$), describe ($t = -4.91$, $p < .001$), act with awareness ($t = -7.11$, $p < .001$), non-judgemental ($t = -3.98$, $p < .001$) and non-react ($t = -3.97$, $p < .001$). Each of the five facets of mindfulness was a significant predictor of disengagement: observe ($t = -3.13$, $p < .001$), describe ($t = -5.80$, $p < .001$), act with awareness ($t = -7.65$,

	(12.8%), Degree (56.4%), Post-graduate (30.7%); Years of experience = less than 5 (37.5%), 6-10 (28.1%), 11-20 (18.8%), 20 and over (15.6%)			p<.001), non-judgemental (t= -4.57, p<.001) and non-react (t= -5.08, p <.001).
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Key: MBI = Maslach Burnout Inventory; OSI = Occupational Stress Inventory; FMI= Freiburg Mindfulness Inventory; MBI-HSS = Maslach Burnout Inventory- Human Services Edition; CBI = Copenhagen Burnout Inventory; FFMQ = Five Facets of Mindfulness Questionnaire; SWC-R = Shortened Ways of Coping Questionnaire-Revised; AAQ-II = Acceptance and Action Questionnaire -2nd edition; ProQOL = Professional Quality of Life Scale; MAAS – Mindful Attention and Awareness Scale; WCC-Revised -Ways of Coping Checklist-Revised; OLBI = Oldenburg Burnout Inventory

Appendix F: Table portraying methodological quality assessment

Table A2: Quality assessment of included studies

Quality Item	Authors and date published										
	<i>Aitken & Schloss (1994)</i>	<i>Askey-Jones (2018)</i>	<i>Devereux, Hastings, Noone, Firth & Totsika (2009)</i>	<i>Di Benedetto & Swadling (2014)</i>	<i>Freedman & Mashiach (2018)</i>	<i>Mascha (2007)</i>	<i>Mitchell & Hastings (2001)</i>	<i>Noone & Hastings (2011)</i>	<i>Thompson, Amatea & Thompson (2014)</i>	<i>Thornton (1992)</i>	<i>Yang, Meredith & Khan (2017)</i>
Aims and objectives clearly described	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Outcomes clearly described	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Characteristics of participants clearly described	N	Y	Y	N	N	Y	Y	N	Y	N	N
Main findings clearly described	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Estimates of random variability provided	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Sample invited representative of population	U	Y	Y	U	U	Y	Y	U	U	U	U

Sample participated representative of population	U	U	U	U	U	U	N	U	U	U	U
Data dredging made clear	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Statistical tests appropriate	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Outcome measure assessing (burnout) reliable and valid	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Outcome measure assessing coping/emotion regulation reliable and valid	U	Y	Y	Y	Y	Y	Y	Y	Y	U	U
Adequate adjustment for confounding	N	N	Y	N	N	N	Y	Y	Y	N	Y
Power	1	0	0	1	2	0	0	0	1	1	1
Total	8	10	11	9	10	11	11	9	11	6	9

Appendix G: Author Guidelines for “Journal of Contextual Behavioural Science”

Types of article

All manuscripts must clearly and explicitly be of relevance to CBS. You may find the JCBS article "[Contextual Behavioral Science: creating a science more adequate to the challenge of the human condition](#)" helpful in assessing whether your manuscript is likely to be of interest to readers of this journal.

Articles should fall into one of seven categories:

1. Empirical research (up to 6000 words)
2. Brief empirical reports (up to 3000 words)
3. Review articles (up to 10,000 words)
4. Conceptual articles (up to 6000 words)
5. In practice (up to 3000 words)
6. Practical innovations (up to 3000 words)
7. Professional interest briefs (up to 3000 words)

Word limits exclude references, tables and figures but include the abstract

1. Empirical research. JCBS welcomes manuscripts across a breadth of domains from basic behavioral science to clinical trials. Research concerning the measurement and testing of process of change is particularly welcome. Potential methodologies include but are not limited to: randomized controlled trials, single case experimental designs, cross-sectional and prospective cohort studies, mixed-methods designs, small scale analog studies. Papers reporting null findings are also welcome if their methodology is sound and their power sufficient. Authors of such papers will need to emphasize the implications of their findings for future research and practice.

2. Brief empirical reports. Manuscripts in this section may report preliminary, provocative or replicated results. Empirically sound methodology and adequate power remain important considerations.

3. Review articles. Manuscripts reviewing a wide range of topics are encouraged as long as their content is directly relevant to CBS. Systematic reviews and meta-analyses are particularly welcome. Authors are advised to consult relevant MARS (<http://www.apa.org/pubs/authors/jars.pdf>) and PRISMA resources (<http://www.prisma-statement.org/>) when preparing such manuscripts.

4. Conceptual articles. Manuscripts in this section should address conceptual or theoretical issues relevant to CBS. This may include papers that discuss relevant philosophical assumptions and traditions, or conceptual papers which explore aspects of or inconsistencies in contextual behavioral theory and science.

5. In practice. Manuscripts in this section are designed to make CBS useful to practitioners from a wide variety of areas. Manuscripts must be written in an accessible style and should be easily understood by practitioners who are not experts in research or basic behavioral

science. Manuscripts should provide both clear insights for new practitioners as well as stating the questions that remain to be answered by future research.

6. Practical innovations. Manuscripts in this section seek to apply the findings and applications of CBS to under-studied, under-served or novel areas. The scope of these manuscripts is limited only by the journal's broad mission: creating a science more adequate to the challenge of the human condition.

7. Professional interest briefs. Manuscripts in this section highlight professional issues of relevance to those working in the field of CBS. Examples include manuscripts related to training and supervision, assessment methods in professional settings or opinions on contemporary issues.

The Journal welcomes suggestions for Special Issues. Proposals for a themed Special Issue should be sent to the Editor-in-Chief, Emily Sandoz at emilysandoz@louisiana.edu, and should include suggested Executive, Advisory or Guest Editors, a proposed call-for-papers, 6-10 provisional authors and topics (specific titles or general areas), a proposed timeline for submission, peer-reviewing, revision and publication. All manuscripts in a special issue will be subject to the normal process of peer-review.

Contact details for submission

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Submission checklist

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

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- Full postal address

All necessary files have been uploaded:

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- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print

Graphical Abstracts / Highlights files (where applicable)

Supplemental files (where applicable)

Further considerations

- Manuscript has been 'spell checked' and 'grammar checked'

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Divide your article into clearly defined sections. Each subsection is given a brief heading. Each heading should appear on its own separate line. Subsections should be used as much as possible when cross-referencing text: refer to the subsection by heading as opposed to simply 'the text'.

Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

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Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

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A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.

Results

Results should be clear and concise.

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This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

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The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

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If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

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Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

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List funding sources in this standard way to facilitate compliance to funder's requirements:

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List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2010). The art of writing a scientific article. *Journal of Scientific Communications*, 163, 51–59.

<https://doi.org/10.1016/j.Sc.2010.00372>.

Reference to a journal publication with an article number:

Van der Geer, J., Hanraads, J. A. J., & Lupton, R. A. (2018). The art of writing a scientific article. *Heliyon*, 19, e00205. <https://doi.org/10.1016/j.heliyon.2018.e00205>.

Reference to a book:

Strunk, W., Jr., & White, E. B. (2000). *The elements of style*. (4th ed.). New York: Longman, (Chapter 4).

Reference to a chapter in an edited book:

Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones, & R. Z. Smith (Eds.), *Introduction to the electronic age* (pp. 281–304). New York: E-Publishing Inc.

Reference to a website:

Cancer Research UK. Cancer statistics reports for the UK. (2003).

<http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/> Accessed 13 March 2003.

Reference to a dataset:

[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T. (2015). *Mortality data for Japanese oak wilt disease and surrounding forest compositions*. Mendeley Data, v1.

<https://doi.org/10.17632/xwj98nb39r.1>.

Reference to a conference paper or poster presentation:

Engle, E.K., Cash, T.F., & Jarry, J.L. (2009, November). The Body Image Behaviours Inventory-3: Development and validation of the Body Image Compulsive Actions and Body Image Avoidance Scales. Poster session presentation at the meeting of the Association for Behavioural and Cognitive Therapies, New York, NY.

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Appendix H: Highlights for empirical article (mandatory for journal)

Highlights:

- Attitudes and exposure to violence impact on wellbeing in forensic mental health professionals
- The strongest predictors of wellbeing are safety beliefs and psychological flexibility (PF)
- The indirect effect of attitudes towards aggression on various aspects of wellbeing were examined
- Attitudes to aggression are associated with wellbeing via exposure to violence and safety beliefs
- The negative impact of safety beliefs on distress is stronger when PF is low

Appendix I: Original thesis proposal



Doctorate in Clinical Psychology

Thesis Research Proposal

(For Methodological Review Only)

This form is for methodological review of projects that are **not** being submitted as assessed work for Research 1. (e.g. where a trainee has already received a pass mark for Research 1, but subsequently changed the intended thesis project, or for trainees who started training in 2009 or earlier and thus did not need to complete Research 1 and have not previously had university approval for their study).

In such circumstances the form will be reviewed by a member of the academic team and will receive detailed feedback, but will not be graded. The feedback will include an evaluation of the viability of the project and any recommendations. If there are significant concerns about viability, the project will be flagged to the research director and the research committee will decide whether the project can proceed in its current form.

Trainee Name
Lorne Bott

Provisional Thesis Title
Does psychological flexibility moderate the mechanism through which attitudes towards violence and beliefs about safety serially mediate the effect of exposure to violence and aggression on forensic mental health professionals' wellbeing?

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Proposed Setting
University of Edinburgh

Allocated Thesis Project Supervisors	
Clinical	Dr Jill Jones (Consultant Clinical Psychologist, NHS Fife)
Academic 1	Dr Corinne Reid, University of Edinburgh
Academic 2	N/A
Others Involved	Dr Nuno Ferreira (Research collaborator)

Anticipated Month / Year of Submission
Must be May of final year. Trainees from 2011 intake onwards must submit in May. Trainees who started in 2010 or earlier are advised to submit in May to reduce potential for HCPC registration difficulties.
August 2019

Date Form Submitted / Version
Version 1:

Please Note: Whilst this is not an ethics review process, where questions have some similarities to questions contained in the NHS IRAS Research Ethics form, the corresponding IRAS question numbers are given in parentheses. This is intended to facilitate completion of NHS ethics where such approval is needed.

Section 1: Introduction
1.1 Provide a brief critical review of relevant literature, which should clearly demonstrate the rationale and scientific justification for the research 1000 – 1500 words <i>Relevant to IRAS A12</i>
<u>Wellbeing of mental health professionals</u> The term “wellbeing” has been described as difficult to define and conceptualise (La Placa, McNaught, & Knight, 2013). One definition that has been proposed is, “the balance point between

an individuals' resource pool and the challenges faced" (Dodge, Daly, Huyton & Saunders, 2012). In this definition, challenges and resources can be psychological, social or physical. In the literature investigating the wellbeing of employees, a variety of proxy measurements have been used to collect data that is thought to be reflective of overall wellbeing including measures of psychological distress, compassion fatigue, job satisfaction, burnout, physical health, absenteeism and turnover intent.

Burnout has been defined as "a state of physical, emotional and mental exhaustion caused by long-term involvement in situations that are emotionally demanding" (Pines & Aronson, 1988). The research indicates high prevalence of burnout amongst mental health professionals (O'Connor, Neff & Pitman, 2018; Paris & Hoge, 2010; Leiter & Harvie, 1996). Compassion fatigue is defined as "a state of tension and preoccupation with traumatized patients by re-experiencing the traumatic events, avoidance/numbing of reminders and persistent arousal associated with the patient" (Figley, 2002) and has been found to predict burnout in mental health professionals (Ray, Wong, White & Heaslip, 2013). Burnout has been linked to higher levels of staff sickness, intentions to leave the organisation, lower job satisfaction, increased staff turnover and negative attitudes towards patients (Pines & Maslach, 1978; Holmqvist & Jeanneau, 2006; Ogresta, Rusac & Zorec, 2008; Acker, 2012; Scanlan & Still, 2013). Moreover, the literature suggests that burnout is linked to lower levels of patient satisfaction, poorer quality of care and poorer outcomes for patients (Garman, Corrigan & Morris, 2002; Salyers, Fukui, Firmin, Gearhart, Noll, Williams & Davis, 2015; Priebe, Fakhoury, White, Watts, Bebbington, Billings, Burns, Johnson, Muijen, Ryrie & Wright, 2018).

Factors related to wellbeing in forensic mental health services

Forensic mental health settings have been identified as stressful places to work (Kirby & Pollock, 1995). It has been proposed that forensic mental health professionals are likely to experience higher rates of violence and aggression than professionals working in non-forensic settings (Mason, 2002; Bowers, Stewart, Papadopoulos, Dack, Ross, Khanom & Jeffrey, 2011). Previous research suggests a link between increased exposure to violence and aggression in the workplace, and burnout in health care professionals (Evers, Tomic & Brouwers, 2002; Howard, Rose & Levenson, 2009). So far, the research into staff wellbeing in forensic mental health services is limited and research into high secure settings is even more scarce. It is difficult to draw conclusions from the limited research conducted in this area (Dickinson & Wright, 2008), with some studies indicating high levels of psychological distress and burnout in forensic mental health services in comparison to non-forensic services (Oddie & Ousley, 2007; Elliot & Daley, 2013) and others reporting conflicting results (Happell, Martin & Pinikahana, 2003). Experiences of violence may lead to staff in these settings being constantly on 'alert' and fearing for their safety. Studies in psychiatric nurses have found that a high proportion have felt unsafe at work (Poster, 1996), and a recent study found that beliefs about safety predicted wellbeing in staff working in a high secure forensic setting (Cooper, Ferreira & Slessor, 2016). Another factor which has been proposed to impact on staff wellbeing is attitudes towards violence, with a small number of studies highlighting links between forensic mental health staff's attitudes towards violence and burnout: with endorsements of positive attitudes towards violence (e.g. viewing violence as a form of communication or protection) linked to lower levels of burnout (Whittington, 2002:

Whittington & Higgins, 2002). Overall further research is clearly required to understand the factors which impact on staff wellbeing in forensic mental health settings, particularly high secure services.

The role of psychological flexibility in wellbeing

In terms of coping, two approaches have been identified in the general literature: practical coping, which involves changing behaviour so that the stressor is controlled or removed, and emotion-focused coping, which involves managing difficult emotions associated with the stressor by avoiding them, denying them or trying to alter them (Lazarus, 1995). Emotion-focused coping has been linked to burnout and psychological distress in mental health and intellectual disability professionals (Mitchell & Hastings, 2001; Hastings & Brown, 2002; Ben-Zur & Michael, 2007; Healy & McKay, 2008). Limited research has been conducted in this area with forensic mental health staff but research has found a link between negative coping strategies such as denial, substance use and behavioural disengagement, and burnout (Elliot & Daley, 2013).

Acceptance and commitment therapy (ACT) proposes that difficult thoughts and emotions are part of the human experience, and efforts to avoid or control these internal experiences leads to behaviour that is not in line with our values, consequently increasing psychological distress (Hayes, Wilson, Gifford, Follette & Strosahl, 1996). Psychological flexibility is proposed to be the central mechanism of change in the ACT model (Bond, Hayes & Barnes-Holmes, 2006). It is defined as “the ability to fully contact the present moment and the thoughts and feelings it contains without needless defence, and depending on what the situation affords, persisting in or changing behaviour in the pursuit of goals and values” (Bond, Hayes, Baer, Carpenter, Guenole, Orcutt, Waltz & Zettle, 2011). General research suggests that higher levels of psychological flexibility are linked to improved mental health, better work performance, increased job commitment and decreased sickness absence (Bond & Bunce, 2003; Bond & Flaxman, 2006). Moreover, psychological inflexibility has been associated with burnout and compassion fatigue in healthcare professionals including oncology nurses and staff working in intellectual disability services (Noone and Hastings, 2011; Duarte & Pinto-Gouveia, 2017).

Only two studies exist (to my knowledge) which have investigated the role of psychological flexibility in the wellbeing of forensic mental health professionals, and only one of these studies was conducted in a high secure setting. Chabinska, Power, Whitefield and Ferreira (2016) found that psychological flexibility mediated the relationship between nursing staffs’ perceptions of predictability in their work, their degree of understanding in relation to their work, and emotional exhaustion (an aspect of burnout) in secure forensic mental health and intellectual disability services in Scotland. It is important to note that there are likely to be differences between the experiences of staff working in intellectual disability and forensic settings, for example, differences in staff training, support and attitudes towards aggression, all of which may have impacted on results. Cooper et al (2016) examined perceptions of the prevalence of violence, beliefs about safety, attitudes towards aggression, and psychological flexibility as predictors of wellbeing (measured by turnover intent, psychological distress, compassion satisfaction, secondary traumatic stress and burnout) in forensic mental health professionals working in a high

secure setting in Scotland. The results indicated that beliefs about safety and psychological flexibility were the best predictors of wellbeing across outcomes. Increased reported exposure to violence and aggression was only found to be predictive of turnover intent, and attitudes towards violence were not found to be predictive of wellbeing. There were, however, correlations weak correlations between exposure to violence and all domains of wellbeing and weak correlations between sub-types of attitudes towards violence and some aspects of wellbeing (e.g. offensive attitudes were moderately correlated with reduced compassion satisfaction and weakly related to turnover desire). The results from these two studies suggest that more research into the relationship between psychological flexibility and wellbeing in this population is warranted.

Rationale for the proposed study

A wealth of research indicates reduced wellbeing in mental health professionals (e.g. high levels of burnout), which in turn can have negative consequences for the organisation (e.g. absenteeism) and patient care (e.g. poorer patient outcomes). Despite acknowledgements of the stressful environment that forensic mental professionals face daily, relatively little research has been conducted investigating the wellbeing of this population, and research in high secure settings is particularly scarce. Despite some promising preliminary research into factors which impact on staff wellbeing in forensic mental health settings, more research must be conducted to replicate these findings. Given that the literature appears to suggest a link between negative coping strategies such as denial, substance use and behavioural disengagement, and burnout (Elliot & Daley, 2013) in this population, it appears that psychological flexibility may play an important role in staff's wellbeing and preliminary research would appear to support this (Chabinska et al, 2016; Cooper et al, 2016). However, only two studies investigating psychological flexibility in this population have been undertaken thus far. There is a clear need for more research to enhance our understanding of the psychological processes underpinning wellbeing in this population to determine key mechanisms of change that future interventions should be aiming to enhance. To date no account of how the factors discussed above interact to effect staff wellbeing in this population. The aim of this study is to present and test a theoretically-driven model which attempts to explain the role of attitudes towards violence, beliefs about safety and psychological flexibility in the relationship between exposure to violence and various aspects of staff wellbeing.

Section 2: Research Questions / Objectives

2.1 What is the principal research question / objective?

IRAS A10

1. Is the relationship between exposure to violence and aggression and staff wellbeing, serially mediated by attitudes towards violence and beliefs about safety?

2. Do levels of psychological flexibility moderate the mechanism through which attitudes towards violence and beliefs about safety serially mediate the effect of exposure to violence and aggression on staff wellbeing?

2.2 What are the secondary research questions / objectives, if applicable?

Keep these focused and concise, with a maximum of 5 research questions

IRAS A11

n/a

Section 3: Methodology

3.1 Give a full summary of your design and methodology

It should be clear exactly what will happen at each stage of the project

IRAS A13

Design

This study will use secondary, cross-sectional data from participants recruited to participate in a study which investigated the relationship between staff safety beliefs, staff attitudes towards violence and aggression and psychological flexibility on the wellbeing of forensic mental health staff. The original study was a thesis project (submitted in May 2016), conducted by a previous trainee on the DClinPsych course at the University of Edinburgh.

Recruitment and participant information

Participants were healthcare staff (n= 142) with direct patient contact working at The State Hospital, a high security psychiatric hospital in Scotland, providing care for male patients with a history of violent offending and most commonly, a primary diagnosis of schizophrenia. Participants were provided with information about the study via e-mail, posters, briefings and an information stall. An information sheet was provided to all participants who chose to take part in the study, which included contact details for the Employee Support Service. Participation involved filling out anonymous online or paper questionnaires, including a demographic questionnaire and seven self-report questionnaires. Ethical approval was provided by the State Hospital Research Committee and The University of Edinburgh, School of Health in Social Science Research Ethics Board.

Procedure

The research collaborator involved in the current study has sought permission from the lead author of the original study to access the data, and for secondary data analysis to be undertaken. This permission has been granted. The researcher will be granted access to a fully anonymised database containing all information gathered from participants for the original study. The database

include demographic information (gender, age, relationship status, nationality, role, percentage of time engaging in direct patient contact, length of service, training undertaken in the prevention and management of violence and aggression), and responses to seven self-report questionnaires: the Perceptions and the Prevalence of Aggression Scale (POPAS: Oud, 2001), the Workplace Safety Scale (WSS: Hayes, Perander, Smecko & Trask, 1998), the Attitudes Towards Aggression Scale (ATAS: Jansen, Dassen, Burgerhof & Middel, 2006), the Work Related Acceptance and Action Questionnaire (WAAQ: Bond, Lloyd & Guenole, 2012), the Professional Quality of Life Scale (ProQOL: Stamm, 2009), the Kessler Psychological Distress Scale (K6: Kessler, Andrews, Colpe, Hiripi, Mroczek, Normand, Walters & Zaslavsky, 2002) and a measure of turnover intent developed by Kelloway, Gottlieb and Barham (1999). The database will be stored in a file in a restricted access folder on the networked area of the University of Edinburgh server, which is backed up on a regular basis. The researcher will only access the database on a University of Edinburgh computer on University of Edinburgh premises.

Ethical issues

Ethical approval for the current study will be sought from the University of Edinburgh. The researcher does not foresee any risks to participants or the research team in undertaking this study.

3.2 List the principal inclusion and exclusion criteria

IRAS A17-1 and IRAS A17-2

Inclusion:

- Staff currently working at The State Hospital in a role which involves direct patient contact

Exclusion:

- Staff with no direct patient contact

3.3 How will data be collected?

If quantitative, list proposed measures and justify the use of these measures. If qualitative, explain how data will be collected, giving reasonable detail (don't just say "by interviews".)

As this study involves secondary data analysis, data has already been collected.

Section 4: Sample Size

4.1 What sample size is needed for the research and how did you determine this?

For quantitative projects, outline the relevant Power calculations and the rationale for assuming given effect sizes. For qualitative projects, outline your reasoning for assuming that this sample size will be sufficient to address the study's aims

IRAS A59 and IRAS A60

Calculating the power to detect conditional indirect effects is complex and research into this is limited (Preacher Rucker & Hayes, 2007). The PROCESS Macro model that will be used to address the primary research question is based on multiple regression. Therefore, the minimum sample size required for multiple regression should be adequate for mediation/moderation analysis. A priori sample size calculations suggested that a minimum sample requirement of 135 to detect a medium size effect (0.15) when completing regression analysis using 14 predictor variables (Soper, 2016).

4.2 Outline reasons for your confidence in being able to achieve a sample of at least this size

Give details of size of known available sample(s), percentage of this type of sample that typically participate in such studies, opinions of relevant individuals working in that area

This study involves secondary data analysis and therefore, an adequate sample size has already been achieved.

Section 5: Analysis

5.1 Describe the methods of analysis (statistical or other appropriate methods, e.g. for qualitative methods) by which the data will be evaluated to meet the study objectives

IRAS A62

A model of moderated serial mediation will be tested using the PROCESS macro for SPSS (Hayes, 2018). This model will estimate i) the direct (perception of exposure to violence/aggression -> turnover desire, psychological distress, professional quality of life) and ii) indirect (perception of exposure to violence/aggression -> attitudes towards violence/aggression -> beliefs about safety -> turnover desire, psychological distress, professional quality of life) pathways and ii) the strength and direction of any interaction with the indirect pathway at different values of the moderator (psychological flexibility).

Section 6: Project Management / Timetable

6.1 Outline a timetable for completion of key stages of the project

E.g. ethics submission, start and end of data collection, data analysis, completion of systematic review

April 2019 – Submit D-R4 thesis proposal form and level 1 ethics form

May 2019 – Ethics approval granted, Write up introduction and methods section

June 2019 – Complete data analysis

June 2019-July 2019 – Write up results and discussion section

July 2019 – Submit draft

August 2019 - Submission

September 2019 – Viva

Section 7: Management of Risks to Project

7.1 Summarise the main potential risks to your study, the perceived likelihood of occurrence of these risks and any steps you will or have taken to reduce these risks. Outline how you will respond to identified risks if they should occur

Failure to receive ethical approval (perceived risk: low)

It is possible that the study will fail to receive ethical approval or may require substantial changes to be approved (which could result in a delay to data analysis and write-up). As the study involves secondary data analysis, the risk of this is thought to be low. The researcher intends to submit an ethics application as early as possible to allow time to re-submit if required.

Loss of data (perceived risk: low)

Once the researcher is granted access to the anonymised database, it will be stored in a file in a restricted access folder on the networked area of the University of Edinburgh server, which is backed up on a regular basis. The research collaborator holds a copy of the original database.

Section 8: Knowledge Exchange

8.1 How do you intend to report and disseminate the results of the study?

IRAS A51

This study will be written in the format of a doctoral thesis for submission in August 2019 towards the Doctorate in Clinical Psychology at Edinburgh University. All theses are uploaded to the University of Edinburgh Research Archives ensuring the results of the study are freely available as the archives can be accessed by the general public.

An empirical research article will be prepared and submitted for publication to a reputable journal with a high impact factor to ensure contribution to the existing evidence base. One journal being considered at this stage is the Journal of Contextual Behavioural Science. The researcher will strive to publish in a journal which allows open-access to maximise the potential audience.

The researcher will actively seek relevant conferences after completion of the project, and submissions will be made to present the results of this study at any that would be appropriate (whether this is in the form of a presentation or a poster). The researcher may also present the findings at clinical team meetings or departmental CPD events.

8.2 What are the anticipated benefits or implications of the project?

E.g. If this is an NHS project, in what way(s) is the project intended to benefit the NHS?

The proposed study will identify the role of key psychological processes and concepts in the development of burnout and reduced wellbeing in staff working in high secure forensic services. This will potentially identify targets to allow future interventions to be designed which will hopefully mean interventions are more effective in reducing burnout and increasing wellbeing. As burnout is linked to increased levels of staff sickness, this could lead to a saving in time and money for forensic services in the NHS. As burnout has also been linked to negative impacts on patient care (Lawson & O'Brien, 1994; Rose et al, 1998- check for more forensic refs), the longer-term benefits of this study may include more positive outcomes and experiences of care for patients too. There is limited research investigating psychological flexibility in this population and therefore, the proposed study would add to the limited evidence base.

8.3 Are there any potential costs for the project?

Outline any potential financial costs to the project, including the justification for the costs (why are these necessary for the research project?) and how funding will be obtained for these costs (how will they be met?) Please separate these into potential costs for the University and potential costs for your NHS Board and note that you should ask your NHS Board to meet stationery, printing, postage and travel costs.

There will be no costs to the university over and above the cost of time of input from the academic supervisor.

Section 9: Any Other Relevant Information

No other relevant information.

Section 10: Key References

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Section 11: Confirmation of Supervisors' Approval

"I confirm that both my Academic and Clinical Supervisors have seen and approved this research proposal and have both completed the supervisors' appraisal forms below."

Delete as appropriate

Yes	
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Main Academic Supervisor's Appraisal of Project Risk

Supervisor's Name

Corinne Reid

Date

24/4/19

Do you consider that the project should proceed in broadly its current form?		
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Delete as appropriate

Yes		
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Outline the reasons for the above response

Highlight any areas of risk to the completion of the project that have not been fully addressed within the proposal and any steps that could be taken to reduce risks

Clinical Thesis Supervisor's Appraisal of Project Risk

Supervisor's Name

Dr Jill Jones

Position

Consultant Clinical Psychologist

Date

26/04/2019

Do you consider that the project should proceed in broadly its current form?		
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<i>Delete as appropriate</i>		
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Yes	Yes, subject to the revisions outlined below	No
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Outline the reasons for the above response

Highlight any areas of risk to the completion of the project that have not been fully addressed within the proposal and any steps that could be taken to reduce risks

Appendix J: Letter of ethical approval from the University of Edinburgh



SCHOOL OF HEALTH IN SOCIAL SCIENCE
CLINICAL AND HEALTH PSYCHOLOGY

The University of Edinburgh
Medical School
Doorway 6, Teviot Place
Edinburgh EH8 9AG

Telephone 0131 651 3969
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Email submitting.ethics@ed.ac.uk

Lorne Bott
Trainee Clinical Psychologist
Department of Clinical and Health Psychology
School of Health in Social Science
University of Edinburgh

15 July 2019

Dear Lorne,

Application for Level 1 Ethical Approval

Reference: CLIN638

Project Title: Does psychological flexibility moderate the mechanism through which exposure to violence and beliefs about safety serially mediate the effect of attitudes towards violence and aggression on forensic mental health professionals' wellbeing?

Academic Supervisor: Corinne Reid

Thank you for submitting the above research project for review by the Department of Clinical and Health Psychology Ethics Research Panel. I can confirm that the submission has been independently reviewed and was approved on the 7th June 2019.

Should there be any change to the research protocol it is important that you alert us to this as this may necessitate further review.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'K Gardner'.

Kirsty Gardner
Administrative Secretary, Clinical Psychology